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Educational News and Editorial Comment

RETIREMENT OF SUPERINTENDENT ETTINGER

On April 23 the Board of Education of New York City elected William J. O'Shea superintendent of schools. Only one vote was favorable to the re-election of Superintendent Ettinger, who completed on April 30 a term of six years as head of the New York City school system. Mr. O'Shea was at the time of his election an associate superintendent. He was nominated by Mr. Ryan, the president of the board, who left the chair to make the nomination and to read a statement in which he attacked the retiring superintendent, charging him with inefficiency and failure to maintain harmonious relations with the board.

The *New York Times* commented editorially on the matter as follows:

> Mayor Hylan has descended to the lowest level in personal politics by virtually dismissing Dr. Ettinger. He has had his will through the board of education. Only one of his appointees, Mr. Arthur Somers, voted in opposition, and he is a man of ability and independence who had earlier membership in the board. Certain charges against the superintendent were made by the president of the board, but they have the color of pretexts rather than of valid reasons for the action which manifestly had been determined upon. They were

ex parte statements made in the absence of the superintendent, who had properly withdrawn during the voting. What might have been said by the superintendent in defense? It is hardly conceivable, however, that the superintendent would fail to comply with a statutory mandatory requirement and so disqualify himself technically.

There has been a want of harmony between the board of education and the superintendent, and the board, exercising its prerogative, has acted within its discretion, however unwisely, as we believe, in deciding not to continue Dr. Ettinger in this important office. But the lack of harmony has been due in the main to the fact that the superintendent has endeavored to preserve the integrity of the office in which he succeeded that great organizer and administrator, Dr. Maxwell, and, beyond that, to protect the teaching body from political interference. This Dr. Ettinger has done at the peril of his own continued tenure of this office of highest honor and responsibility. Whatever may be said of his relative qualifications, he has fought a good fight for high professional standards on the part of teachers and for promotion on the basis of merit as well as for progressive methods in teaching.

One need spend no time in commiserating Dr. Ettinger. He is relieved of a responsibility which is, after all, so heavy and complicated that no man would wish to undertake or keep it except from a sense of duty. The tragedy is not personal. It is that he who has stood as the last barrier in the protection of the schools against even the appearance of evil has been overcome by forces that seem to be dominated by motives not the highest and purest.

It can only be hoped that Dr. O'Shea, who has been a loyal adherent of Dr. Ettinger, will show himself possessed of the latter's courage and ability. He must know what the peril is and what the public expects of him. He can win the confidence of that public and preserve the morale of the teaching body only by vigorous defense of the policies which Dr. Ettinger and Dr. Maxwell before him have so manfully maintained for the good of the schools and without concern for their own fate. If he fails in this, there is still a lower level than that which seems now the lowest. He has our best wishes, and we hope that he will resist this descent.

To the educational profession of the country the New York situation is a source of grave concern. Superintendent Ettinger unquestionably had the loyal support of the better citizens and teachers. He was harassed continuously by politicians who are determined to subordinate the schools to the municipal authorities. He was independent and brave and made an effort to maintain within the schools a professional spirit and professional standards while his opponents attempted to intimidate him and all who supported his policies. If these things can happen in the greatest school system in the United States, one wonders what incentives

there are for the cultivation of professional virtues among school officers.

Furthermore, one cannot escape the conviction that the educational profession is at the present time altogether ineffective in reaching the public mind with information and discussions which will contribute to sound thinking on school matters. The New York politicians know that the issues between Mr. Ettinger and the board with which he had to deal are not defined in public thinking and that there will be, at the most, only a very brief interest on the part of the average citizen in the election of a school superintendent. Indeed, the ordinary citizen has practically no basis for judgment in the case.

Is not this lack of intelligence with regard to school matters directly traceable to the fact that teachers' organizations have devoted themselves in too many instances to the discussion of personal issues, such as increases in salary and permanence of tenure, and too seldom to the training of the public to understand the problems involved in organizing an efficient system of democratic education? To one who watches the New York teachers' organizations from the outside, Dr. Ettinger's failure to secure re-election looks like a victory of vicious politics traceable to the fact that the teachers in that city have not made the community sufficiently intelligent on school problems. The educational associations of New York seem to think more about laws relating to the advantages of school employees than about the best methods of teaching reading and the best methods of avoiding failures in arithmetic. It is not difficult for an outsider to understand, under these conditions, how the politician secures control and boldly exercises that control.

The remedy for this whole situation is not to be found in invective against President Ryan and his associates, or their boss, Mayor Hylan, much as one is tempted to pause and let them know what the teaching profession of the country thinks of them. The real remedy is to be found in a much more complete professionalization of American education so that it shall ultimately be as inaccessible to corrupt political attack as is the judiciary. The task of American teachers is clearly indicated by the political doings in New York; it is to make the schools very much more efficient agencies for teaching the people the intellectual arts essential to a democracy.

THE PLATOON PLAN

The school system of Chicago is engaged in discussing, under the guidance of its new superintendent, various devices which can be adopted to relieve the congestion in the school buildings. The people of the city have been drawn into the discussion, and one reads in the newspapers accounts of the junior high schools which are about to be opened and reasons why platoon schools should or should not be considered.

The arguments for and against platoon schools are unfortunately complicated by certain happenings that from one point of view are irrelevant to the present discussion but from another point of view are not unlikely to be thought of as highly important. Before Superintendent McAndrew assumed office the Teachers' Federation had committed itself against the platoon plan. The chief reason assigned for this was that delegates of that organization had visited Detroit and had concluded that the Detroit platoon schools are failures. The exact respects in which Detroit is unsuccessful in its venture have never been pointed out in detail, but it is reported with vigor, if not with particularity, that Chicago must not follow the example of Detroit. Thus the present discussion seems to turn somewhat overmuch to Detroit and to the opinion of certain delegates of the Teachers' Federation.

Superintendent McAndrew showed great wisdom in taking from the first the position that Chicago cannot solve its problems by the Detroit plan or by any other borrowed scheme. Chicago must have a Chicago plan.

It will be wholesome for Chicago to consider certain general facts along with all of the other school systems of the country. Briefly put, these facts are that a modern elementary education cannot be administered to a child sitting all day in a single seat. Nature study, physical education, shop work, and library reading require equipment of their own and movement of the pupils about the building. Furthermore, these special equipments must be used in succession by various groups; this is absolutely required in the interests of essential economy.

If the statements in the last paragraph are accepted as true, some form of the platoon system is admitted to be necessary,

because the movement of children in successive groups to especially equipped rooms is the platoon plan. There are numerous details which will have to be worked out, but it is the part of wisdom to begin working on the plan rather than to spend one's time fighting the inevitable.

Perhaps it will be necessary for the peace of mind of Chicago to rechristen the plan. It might be called the multiple-facility school in order to make it perfectly clear that the children are not being deprived of their rights and the teachers are not being forced into abnormal relations to their wards. It might be called the plan of a modern expanded education. It might be described by some such name as the all-round-education school. Some enterprising philanthropist would do the country a service by financing a competition to find a name that would allow the Teachers' Federation to vent its spleen on Detroit—which, by the way, has of late been frequently held up to Chicago as an example—and at the same time not keep Chicago from being behind that energetic center in developing rich and varied curriculums for the pupils in the schools.

CERTIFICATION OF SUPERINTENDENTS

At a meeting of the superintendents of schools in Minnesota, held at the University of Minnesota in April, an important report of a committee on the qualifications which should be required of superintendents was considered and adopted. The report reviewed the opinions of a number of leaders in education in the state and presented a plan for state certification. This plan was recommended for adoption by the state department of public instruction.

Extracts from the report are quoted as follows:

> Your committee appointed to investigate the matter of qualifications for school superintendents has endeavored to secure some information on the subject to present to you for your consideration. We have investigated the qualifications in other states and find that they vary from practically no academic and professional standards to standards that are very high.
>
> Commissioner McConnell says: "A city superintendent should possess a liberal education so that he may express in himself the scholarship which the position should represent. He should possess adequate professional training with special reference to administration and supervision. He should have teaching and supervisory experience sufficient to enable him to formulate and

direct a consistent school policy. He should be familiar with both the secondary- and the elementary-school field."

This statement seems to cover the ground rather completely, and if we can determine what constitutes a "liberal education," "adequate professional training," and "sufficient teaching and supervisory experience," we have the qualifications defined.

Quoting President Coffman, "I think that the minimum training which anyone should have for a city school superintendency is graduation from a reputable college. It is also my opinion that he should have taken, while in college, courses in certain fields designed to train and fit him for the special field of work which he expects to enter. He should have had courses in the fields of secondary education, elementary education, educational psychology, and educational administration and perhaps some work in trade and industrial education. Certainly, no one should be permitted to enter upon a public school superintendency in this day and generation without being thoroughly familiar with the technique of educational and mental measurements.

"It is also my opinion that one should have a certain amount of experience as a teacher, preferably both in the grades and in the high school, and some experience in a principalship before actually being promoted to a city school superintendency. However, I should be willing to waive these rules in the case of persons of unusual ability."

A superintendent writes: "As to experience, there should be at least three years of teaching experience or a smaller amount of teaching experience coupled with administrative experience in either a graded school or a high school. I am absolutely opposed, however, to the requirement that in order to obtain a superintendency of a high-school system, the man must have had two years of experience in a graded school. Experience in a graded school does not in itself fit one for the administration of a city school system. In fact, it may be the very thing that unfits him for the city superintendency. He acquires the 'small-system' way of doing things. Personally, I believe that the man who has come to the superintendency by way of a graduate school and a high-school principalship is better fitted for the job than the man who has only the two years of graded school administration as his qualification."

Another superintendent writes in a somewhat different vein as follows: "Young men with very little experience are stepping into small superintendencies, and, in my opinion, communities which employ such men suffer materially from their lack of experience. It seems to me that there are too many men going from the high-school principalship to the superintendency with no grade experience whatever. I have no objection to a man who is qualified being elected from a high-school principalship to a superintendency, but I feel that in too many instances such a possibility has been for some a source of trouble and annoyance. I heard a prominent superintendent express himself to the effect that he thought a law should be enacted to disqualify a high-school prin-

cipal from becoming a superintendent in the schools in his own city until after a lapse of two or three years after resigning his position as high-school principal."

After going over the returns from our fellow superintendents and investigating the requirements in other states, your committee has the following to suggest as a basis for consideration:

We suggest that there shall be issued superintendents' certificates of three grades, namely, first, second, and third.

A superintendent's certificate of the first grade shall be valid for five years and renewable for life on presentation of evidence of three years of successful experience in administration. The requirements for this certificate shall be (1) graduation from a standard college or normal school (four-year course), the course to include a minimum number of hours in administration or supervision; (2) five years of successful experience as administrator, teacher, supervisor, or principal, at least two of which shall be in the field of elementary education; (3) a master's degree in education from a standard college or university, the graduate work to include a minimum number of hours in administration and supervision.

A superintendent's certificate of the second grade shall be valid for three years and renewable for five years on presentation of evidence of two years of successful experience in administration. The requirements for this certificate shall be (1) graduation from a standard college or normal school (four-year course), the course to include a minimum number of hours in administration and supervision; (2) three years of successful experience as administrator, teacher, supervisor, or principal, at least one of which shall be in the field of elementary education.

A superintendent's certificate of the third grade shall be valid for two years and renewable thereafter for a period of two years on presentation of evidence of one year of successful experience, professional spirit, and additional school preparation, this certificate to be issued only to those employed as superintendents in Minnesota at the time of the adoption of these regulations.

THE SEVENTH BOOK OF SAVANNA EDUCATION

Each year the school system of Savanna, Illinois, issues a handsomely printed pamphlet intended to give the people of that city an impression of the work which is being done in their schools. *The Seventh Book of Savanna Education* is printed by the Roycrofters of East Aurora, New York, and tells about such matters as the recitation, measuring the product, and other problems of school organization. The style in which the discussion is carried on is not the traditional style of an official report but rather that of an informal letter or conversation. The following quotation is typical:

Nowhere but in the schoolroom does one find the practice of hands-up for recognition. Only there do you hear the snapping of fingers as a means of attracting attention. When grown-ups get together, they stand when they wish to be heard and talk only after having gained the consent of the chair.

Savanna education carries the practice of deliberative bodies into the recitation by a use of the rules of order in all pupil-planning and pupil-doing.

The first pupil up is recognized by the teacher. The one recognized then has the floor, unless he has already spoken on the topic, in which case the second one up is given the preference. This gives all of the children an opportunity to express their views. It stimulates the "bench-warmers" to action and controls the three or four stars who usually do the bulk of the talking.

The rules of order applied to the recitation instil into the group a feeling of respect for the rights of others and an appreciation of service through contributions.

At the end of the book appears this appeal to the fathers to visit the schools:

Say, Dad, as sure as you live, Red Foley's Dad visited our school last week. All the time we were recitin' he sat there and seemed to enjoy it. Anyway, as he was leavin' he said he'd had a whale of a time 'nd that he was comin' back again, even if he had to lay off a day to do it.

But you otta seen Red! That recess he made three homers 'nd jumped five feet in the air for a red hot liner. He kinda rubbed it in, too, by sayin', "How'd you like to have a real Dad like I got?" We sorta passed it off by sayin' our Dads were too busy—or somethin' like that.

Honestly, Dad, when are you goin' to come across like Red's Dad, and s'prise me?

MEDICAL SUPERVISION IN CATHOLIC SCHOOLS

The Bureau of Education of the National Catholic Welfare Council has just issued a bulletin on *Medical Supervision in Catholic Schools*, prepared by its special agent, Mary E. Spencer. This is the first of a series of bulletins to be published on health education. The bureau plans "to encourage health education in Catholic schools through releasing such bulletins and through lectures which are to be delivered at various motherhouses, teacher-training institutions, and colleges throughout the country where future teachers are now in training. A series of such lectures were delivered last year in the larger motherhouses of the country. In this way it is hoped that the gospel of health education will be brought to the ears of those who will in the future shape the policies of the Catholic school system with regard to the formation of the curriculums."

What is now being done in various parochial school systems in the matter of medical supervision is stated on page 38 of the bulletin. Incidentally, the figures given indicate something of the magnitude of the parochial systems in various cities. The page referred to reads as follows:

Through a questionnaire sent recently to the diocesan superintendents of schools it was learned that our schools in many places are benefiting by the medical supervision of their city boards of health. The superintendents of the following dioceses report that the city boards of health control medical inspection in the parochial schools, with the following number of children under supervision: New York City, 100,000; Cleveland, 41,649; Cincinnati, 28,000; Baltimore, 24,000; Milwaukee, 24,000; New Orleans, 20,000; Syracuse, 18,000; Los Angeles;[1] Helena, 250 (one school); Pittsburgh, 41,000; Fort Wayne, 2,929; and Grand Rapids.[1] The superintendents of Albany and Harrisburg report that their medical inspection is entirely of the parish type.

In St. Paul the work is under the control of the Bureau of Education of the Archdiocese of St. Paul. Every school in St. Paul and Minneapolis, 43 in number, has medical supervision, 20,000 children being supervised. Some schools in these cities have a physician in regular attendance, but the work is carried on mostly by eight graduate nurses employed by the Bureau of Education. The expenses are paid by the bureau, which assesses each school at the rate of about 5 cents per child per month. The St. Paul schools pay 45 cents per child per year, while the Minneapolis schools pay 52 cents per child per year—one cent a week or less each year to safeguard the health of a growing child!

In Boston it is the policy of the diocesan authorities to have a medical inspector, whose services are paid for by either the parish or the local board of health, in every school of the archdiocese.

Toledo meets its problem in still another way. The work in the Catholic schools is under the control of the diocesan superintendent of schools; the program is financed by the diocese, the diocese and the constituent parishes bearing respectively one-half the expense.

Catholic schools everywhere are taking up the work and are looking forward to expanding it from year to year. To keep up parish interest and insure proper support, careful records of proceedings should be kept, and from time to time accounts of achievements should be printed in the church bulletin or some other medium, so that the parishioners may be kept acquainted with the progress and effectiveness of the work.

CURRICULUM MATERIALS

It is characteristic of the present epoch of interest in curriculum-making that many agencies are issuing pamphlets which give

[1] No figures available for number of children under supervision.

serviceable materials and references on the various school subjects. Frequently, these pamphlets report the work of teachers who are in direct contact with school problems; at other times they come from schools of education and other divisions of universities and bring to teachers the results of the investigations of specialists.

Four publications which have appeared during the past month seem worthy of special mention. These are as follows:

A Guide to Readings in Civic Education, prepared by Olive Thompson and issued by the University of California, may be purchased for 75 cents. It contains an annotated list of the discussions useful to the teacher of civics to be found in educational books and journals and also in books and articles on sociology, political science, and related subjects.

Teaching Patriotism and Citizenship in the Schools of West Virginia is a publication of the State Department of Education of West Virginia and contains materials which can be used directly for class exercises.

Reading and Phonics is a course of study monograph of 104 pages issued by the public schools of Berkeley, California. It is the working handbook of that school system and contains lists of reading materials, discussions of methods, and statements of appropriate lines of work in the various grades.

Teachers' Difficulties in Arithmetic and Their Correctives is a clinical handbook prepared by Ruth Streitz and published by the Bureau of Educational Research of the College of Education of the University of Illinois. It may be purchased for 30 cents. It is a very helpful discussion of the most common difficulties encountered in dealing with arithmetic and gives excellent suggestions to the teacher as to methods of meeting these difficulties.

SUGGESTIONS FOR IMPROVING WRITTEN COMPOSITIONS

Superintendent R. C. Smith, of Morgantown, West Virginia, has prepared a series of suggestions for the improvement of the quality of written compositions, as follows:

1. Have the work done in the schoolroom.
2. Let the pupils write on those subjects about which they talk freely and in which they are interested.
3. Limit most of the work to one page.

4. Use reproductive exercises sparingly.

5. Give some work in copying from dictation.

6. Correct most of the work in the schoolroom. Pupils should learn to find their own mistakes and correct them. It is often helpful to have the pupils exchange papers and then correct them. It is also desirable to write a composition on the blackboard and let the pupils correct it together.

7. When a pupil is examining his own composition or that of one of his classmates, with a view to pointing out errors and correcting them or to improving the composition, or when teacher and pupils go over compositions together, *only one type of error should be considered at a time. This is of the utmost importance.*

With standards for the grade in mind, the following order of work is suggested:

1. Read over the composition as a whole to see if something worth while is told in an interesting way. The test is, Do you like it?

2. Examine the mechanical make-up of the page: indention, left-hand margin, etc.

3. Examine the composition for sentence structure. Is the "sentence sense" being developed? Is there variety in the kind of sentences used (declarative, interrogative, exclamatory)? Are there any "comma" sentences, "clause" sentences, and "and" sentences?

4. Look for technical mistakes, such as mistakes in the use of (*a*) capitals, (*b*) abbreviations and contractions, and (*c*) punctuation. (See *Course of Study*, pp. 52–53, for grade lists.)

5. Examine the composition carefully for errors in grammar. Drill on common errors as they reveal themselves in written work. (See *Standards in English* by John J. Mahoney, p. 110.)

6. Look for misspelled words. Have them corrected by the writer. Have pupils keep lists of "Words I Sometimes Misspell."

THE JUNIOR SCHOOLS OF SAN ANTONIO, TEXAS

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The school system of San Antonio, Texas, inaugurated in September, 1923, one of the most complete reorganizations which has ever been undertaken in an American city. Up to the date mentioned the schools had been of the type common throughout Texas. The elementary schools admitted pupils of seven years of age and carried them through seven grades. The high schools were four-year institutions, accepting into their freshman classes those who had completed the work of the seventh grade. In the years preceding the reorganization there was general congestion in most of the school buildings. In 1922, the citizens voted a bond issue of $2,000,000 in order to provide new buildings.

Superintendent Rhodes, who was appointed in San Antonio three years ago, took the opportunity offered by the bond issue and the prospect of a number of new buildings to reconstruct the whole plan of education in the city. He organized the elementary schools as five-year schools. He opened in seven new buildings and three old elementary-school buildings what he calls junior schools. These provide the sixth, seventh, and eighth years of schooling. Eight of these schools are for whites and two are for negroes. The high schools were left to provide the final three years of the total of eleven years.

In anticipation of this radical change, in order to prepare the teachers and principals of the city to participate intelligently in the new plan, the superintendent persuaded the board of education to bring Professor J. L. Henderson of the Department of Education of the University of Texas to San Antonio for a series of lectures and discussions. These began in the autumn of 1922 and extended throughout the school year preceding the reorganization. All teachers in the system were invited to attend the exercises conducted by Professor Henderson. The board furnished a library containing

literature on the junior high school and related problems, and the members of the teaching staff supplemented the library by additional purchases. Professor Henderson lectured part of the time, and for the rest of the exercises organized the teachers into committees which discussed in detail the changes needed in various subjects of instruction so as to adapt them to the new organization.

During the summer of 1923 a number of the teachers under appointment for the new junior schools and especially the principals of these schools went to different parts of the United States, attending the leading summer schools where the junior high school was under discussion. They also visited the cities where successful experiments in the organization of such schools could be observed. After this preliminary work on the part of the teachers and principals, the new schools were opened, as indicated, in the autumn of 1923.

In the meantime, the central office had been staffed with a group of officers in charge of the junior schools. At the head of the new staff is an officer directly responsible to the superintendent and in general charge of all of these schools. He is known as the director of junior education. Under him there are five directors of instruction, dealing, respectively, with English, mathematics, social studies, health education, and the so-called related arts which include sewing, cooking, manual training, mechanics, printing, etc.

It may be well to pause at this point and call attention to the fact that the official terminology which is used to describe the various schools and officers in the new system was carefully considered. The new school which stands between the elementary school and the high school is not called a junior high school but a junior school. In like fashion, the term "high school" is dropped as the name of the highest unit in the system, that being designated "senior school." The conception which underlies this terminology is that of a completely unified succession of schools. This unified series of educational units is made up of a five-year elementary school, a three-year junior school, and a three-year senior school.

In like spirit, the officers in charge of the schools are not called supervisors or assistant superintendents but are known as directors. In addition to the new officers mentioned in an earlier paragraph

as responsible for the junior schools, there are a director of elementary education and a director of industrial education. The plan, when fully worked out, will include also a director of senior education and a director of research.

Some of the activities of the central staff of the junior schools are as follows. The director of junior education meets each morning with the directors of instruction to discuss the various problems which have come up in connection with the organization and administration of instruction. The directors of instruction, who are distinctly field officers, then go to the schools. They plan to visit different buildings and for each to spend the whole day at a single building. During these visits they attend classes in their various departments, spending a whole period with each teacher visited. The teacher has been notified in advance that the director is to visit the class at a certain hour and is consequently fully prepared. A conference follows the visit either immediately or after school.

Once a week the principals of all of the junior schools come together, and the problems of these schools are discussed from their point of view. The schools are not provided with assistant principals, but each school has a clerk in charge of the office. This method of administering the system and the individual buildings is regarded as, on the whole, more economical than the usual more decentralized plan.

The centralized control which is provided through the meetings and other arrangements described is intended to produce in the schools as much similarity of operation and instruction as may seem wise. At the same time, local conditions are allowed to affect the schools in such a way as to leave each principal and each teacher a large amount of discretion in his or her own field.

The extent to which concession is made to local demands may be illustrated by the extreme case. One of the junior schools is in a part of the city where practically the whole pupil body is drawn from Mexican homes. The work of this school is very different from that of any of the other schools. Great emphasis is laid here on the practical arts and on English. Even the equipment of this school exhibits the spirit of adaptation to local needs in that the shops and kitchen and sewing rooms are more elaborately equipped than in any of the other schools.

The visitor who studies the new junior schools carries away a number of vivid impressions. First, the mild climate and the relatively cheap labor available in San Antonio have made it possible for the authorities to build at astonishingly low rates. Furthermore, the most commendable thrift was exercised in handling the funds. The following paragraph summarizes this phase of the matter:

> The bonds voted were promptly sold. One-half was sold the first year, bringing a premium of $16,150; the other half of the bond issue was sold a year later at a premium of $27,600. To add further to the sum finally available for plant enlargement, the bond money was deposited under conditions where it would bear interest till used. In this way the fund was augmented by about $47,000. This with the premiums above mentioned amounted to $90,750, affording a sum for building purposes amounting to $2,090,750 in round numbers. Of this sum, $1,500,000 was used for the junior school buildings. This amount covers sites, buildings, and equipment for seven junior school centers, each of a capacity ranging from 500 to 650 pupils. These buildings have been built in convenient locations for the neighborhoods they were designed to serve. The locations were selected with a view to drawing children outward from the congested traffic centers, all other things being equal.[1]

Second, one finds the buildings very well adapted to their purposes. They are supplied with libraries, auditoriums, cafeterias, shops, and playgrounds. The shops are housed in separate buildings. Mention should be made of the fact that in the main buildings there are kitchens, sewing rooms, and science laboratories.

The third impression which one gets is that the pupils and teachers are all very enthusiastic about the new courses of study and the new methods of discipline. There is a general practice of self-government and pupil participation in all of the activities of the school. These contribute a new sense of responsibility.

The fourth impression which one gets is that the courses of study have, in reality, been made over. There were points at which the material on which pupils were reciting sounded painfully conventional. This was especially true in the social-study classes. Textbooks were in the hands of the pupils which dealt in a labored fashion with the commercial and governmental exploits of the Egyptians and the Greeks. The resemblance to ancient history

[1] *The Junior Schools: Organization and Administration*, p. 16. San Antonio Public Schools Bulletin, Volume I, No. 1. San Antonio, Texas: Board of Education, 1924.

was all too obvious. Even here, however, the pupils seemed to be eager and willing to follow the teacher's lead.

In the classes in mathematics where constructive geometry and the elements of algebra were being freely introduced, there was evident relief on the part of the pupils from the deadening effects of the old-fashioned drill to which the upper grades of the elementary school are usually subjected. No one could doubt, after seeing some of the good work going on in the mathematics classes, that pupils in these grades can comprehend principles and methods which are distinctly in advance of arithmetic.

In the science classes where general science was being studied, there were the usual differences in effectiveness of instruction due to the varying skill of the teachers. The new subject is evidently in need of further refinement, but again the new subject was making a strong appeal to the pupils. It will, undoubtedly, in the long run, be more effective than the geography of the old program.

A general account of the aims and plan of the reconstructed curriculum of the junior schools is given in the following quotation:

> The program of studies of the junior schools is based on the idea of constants and electives rather than that of multiple courses. The junior school is considered to be a place not of specialization but of exploration; not a school for vocational training but one of prevocational "finding courses." The multiple-course plan requires the child to decide during the early part of his school life what course he will pursue and therefore tends toward early specialization. The constants and electives scheme, on the contrary, requires each pupil to pursue certain fundamental studies throughout his course, supplementing these by choosing from a group of electives those which seem to him, his parents, and his advisers, best suited to his needs.
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> The constant and elective studies vary considerably in the different years of the course. In the sixth grade all subjects are constants, on the theory that the children of this grade should probably all pursue the same course of fundamental studies and that they are not yet ready to exercise an intelligent choice of subjects. In the seventh grade a small amount of elective work is provided in addition to the constants of English, mathematics, physical education, social studies, and the study of vocations. The present program allows the pupil to choose six hours out of the following: foreign language, 5 hours; manual arts, 5 hours; domestic science, 5 hours; commercial courses, 5 hours; music, 1 hour; art, 1 hour.
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> These electives are of an exploratory nature, giving the child an opportunity to try himself out in several different lines of work, to discover whether he has

special aptitudes or abilities that may later determine his choice of a life-work or his future studies.

For instance, the course in foreign language is not intended to start the child definitely on the technical study of a language but to give him something of the background of the language through a study of the life, customs, and history of the people whose native tongue it is. The course in commercial work is rather general in its nature, giving the pupil a chance to see what the various business courses are like before he plunges into them in the later years of his course.

Constants are considerably reduced in the eighth grade, the pupils being required to carry only English, physical education, and social studies, making a total of 15 hours per week. This leaves 15 hours which the pupil may choose from the following: mathematics, 5 hours; general science, 5 hours; Latin, 5 hours; applied art, 5 hours; manual training, 5–10 hours; domestic science, 5–10 hours; commercial courses, 5 hours.

Some of these elective studies are intended as a preparation for further study in high school and college, but others are expected to be definitely vocational and to form a partial, if not complete, preparation for the pupil's vocation. Such are the courses in commercial work, manual arts, domestic science, and applied art.[1]

The fifth impression which the visitor gets is that the new machinery is running with surprisingly little friction in view of the radical character of the general change which has been undertaken. Any superintendent who is familiar with the obstacles which always arise in introducing new subject-matter and new modes of organizing schools will be fully converted, by a visit to the schools of San Antonio, to the plan of intensive preparation which Superintendent Rhodes carried out during the year prior to the actual opening of the junior schools.

Furthermore, it is the belief of the present writer that the wholesale attack on the problem of reorganization which Superintendent Rhodes was bold enough to venture is much more likely to be successful than a timid approach in one or two schools. The larger program makes it possible to carry the teaching staff along in a much more vigorous way and to provide more energy at the central office to keep the experiment moving in the directions which promise success.

To be sure, the city of San Antonio has still to be completely persuaded of the wisdom of the move, but the results of the last

[1] *The Junior Schools: Organization and Administration*, p. 40.

school election as well as the comments of citizens who have been in the new schools seem to indicate a rapid development of appreciation of the new plans. It is probably better from the point of view of political policy as well as from the point of view of educational policy to proceed in a large way when one starts out to organize junior schools.

There is one question which immediately arises in the mind of anyone who considers these schools as a part of a state system of education which has traditionally devoted seven years to elementary education. It has ordinarily been assumed that there is no such urgent need in the South as in the North for the reorganization of the upper grades. The question raised by the inclusion of the sixth grade in the junior school is a very interesting and important question for the whole junior high school movement.

The considerations which moved Superintendent Rhodes in this matter were described by him in some such terms as the following: The pupils who complete the fifth year of an elementary school in San Antonio are approximately twelve years of age. It is to be remembered that the entering age is seven. This degree of maturity calls for a different type of instruction and a different type of discipline from those required in the lower grades. The maturity of the pupils, therefore, dictates a new type of school for those who have reached the sixth grade.

A school, in order to be an effective social unit, must include each year a sufficient number of pupils who are acquainted with its practices and traditions to constitute decidedly more than a majority. Any effort to organize a school including only two grades will encounter serious handicaps because of the changing character of the pupil population. The best way to secure stability is to include in a school at least three years. This provides each year the numbers necessary to insure an accumulation of school spirit and perpetuation of school traditions. Since the senior school as well as the junior school must have three classes, the only way to work out the organization in the Texas schools is to reduce the elementary program to five years. This can be done without jeopardizing the education of pupils in the subjects usually taught in the elementary school because anything not completed in the

lower school can be carried over into the junior school. As a matter of fact, experience shows that sixth-grade pupils are mature enough and well enough trained to justify an educational program for them which is wholly different from that provided in the lower grades.

One feature of the junior schools which, perhaps more than any other, strikes the visitor is the library. A large room on the first floor, near the principal's office, is provided in each of the buildings to be used as a library. Here are collections of textbooks and other reading materials, including magazines and daily papers. A librarian is in charge. Each period pupils come to the library from various parts of the building, sometimes with their teachers or in small groups without a teacher. They sit down at the long tables and read. Sometimes they study out of textbooks; sometimes they read the other types of books or the magazines. The library is a central feature of the intellectual life of the school. The board of education appropriated $25,000 for the purchase of books the first year.

The class exercises in all of the junior schools are one hour in length. The teachers vary the work within the period as they see fit.

The classes are sectioned according to the ranks attained by the pupils in their work.

The importance of individual differences to group education is widely recognized. Although much can be done by a skilful teacher to meet individual needs without homogeneous grouping, it has been proved that better results are achieved when pupils are classfied according to ability. As Franzen says, in the unclassified group the superior pupil is bored to tears, whereas the slower ones are mystified, while the instructor naturally teaches the average group, which is the largest.

The San Antonio junior schools range in enrolment from 500 to 800. As a result, the number of sections in any classification averages about three. Hence we are committed to a three-track system, with superior, average, and slow groups. In the section on "Measurement in the Junior School" the method by which the pupils are ranked and the sections obtained from the ranks is explained.

From the point of view of the course of study this kind of classification is most important. We are agreed that if this sectioning is to be of service then there must follow a differentiation in the amount of work expected or required of the respective groups. Thus the slow group is really the minimum-essential group; the average group is to accomplish all that the slow group does plus

an additional definite requirement; and the superior group is to do the work required of the average group and in addition an appreciable amount having no definite upper limit.

It is our experience that the large majority of the teachers find homogeneous grouping of distinct aid in their problem of meeting the individual needs of the pupils. It is also important to emphasize the fact that every attempt is made to forestall any social distinction between speed groups on the part of the teachers. We feel that this is fundamental in a democracy, even though every student of education is aware of the fact that the very superior pupils need special attention if we are to train adequately for leadership in our national life.[1]

Much is done in the junior schools to meet the special needs of adolescent children. A great deal of attention is given to clubs, assemblies, and play. In addition, the teachers and principals are making a careful study of the problems of educational and industrial guidance. In one sense, the whole school is thought of as an institution for exploration and pupil guidance. Much of the instruction is aimed at the discovery of the pupil's aptitudes. Special instruction is, however, undertaken in a unit of the curriculum which is described as follows:

The varied activities of the junior school, all of which have a most vital bearing on the problem of guidance, have been adequately described throughout this bulletin. In addition, there are classes in vocational guidance which meet three periods a week throughout the seventh grade. These classes are uniformly in the hands of sympathetic and skilled men and women who are primarily interested in boys and girls.

The work of this guidance teacher is first that of learning the differences in capacities and aptitudes of the individual pupils. The ratings of the intelligence test are here found indispensable to the teacher. From these the guidance teacher has a basis for guiding the pupils in the investigation of vocations.

In the study of vocations, the aim of the school is to give an understanding of various occupations, to teach pupils to weigh the advantages and disadvantages of such as appeal to them, and to estimate as exactly as possible their own abilities and temperaments in relation to the vocations studied. This study further guards the opportunity for the almost inevitable shift of adolescent interest as well as brings a definite educational return. All this involves a thorough knowledge of the demands of various occupations. To meet this essential, we are collecting all available information and making a continuous study of local demands and opportunities.

All the home-room teachers and more especially the principal and guidance teachers are attempting to guide the pupils in their further school choices.

[1] *The Junior Schools: Organization and Administration*, pp. 44–45.

On the basis of the above mentioned information, the principal and teacher are able to forecast with much accuracy those who will or must leave school early, those who will stay for an indefinite period, and those who will continue on through high school and professional school. The adjustment of the school work to the needs of the individual on the basis of this information is the heart of the junior school.[1]

The new organization which Superintendent Rhodes and his associates have set up is of more than local interest. The other experiments with the junior high school which have been tried in Texas have been of little effect in reorganizing either the curriculum or the methods of teaching. Outside of Texas, the great majority of junior high schools have been timid approaches to the ideal which San Antonio has boldly attempted to attain on a large scale. The development of the San Antonio program will be watched by progressive school people with the keenest interest. It is, so far as it has gone, a pronounced success.

[1] *The Junior Schools: Organization and Administration*, pp. 52–53.

THE ELEMENTARY-SCHOOL PRINCIPAL FROM THE TEACHERS' POINT OF VIEW

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Until recently, no serious attempts have been made to study the necessary qualifications of a good elementary-school principal. Many elementary-school principalships have been filled with men because of the prevailing belief in the community that a man should be at the head of the grade school. If a man could be found who possessed the minimum requirements established by the state educational laws and was willing to accept the salary offered, he was given control of the school. Sometimes a satisfactory man could not be found who was willing to work for the money offered, and the teacher of the highest grade, usually the eighth grade, was given the position regardless of fitness or qualifications.

Within the past few years, educational experts have attempted to diagnose the case of the elementary-school principal so that prospective principals might be prepared to fill the positions more efficiently. The results of a course given at Stanford University are very ably presented by Cubberley in his new book, *The Principal and His School*.[1] In this book the characteristics of a successful elementary-school principal are well set forth both from the point of view of the professional educator and from the point of view of the experienced principal. It occurred to the writer that the point of view of the elementary-school teacher might throw additional light on this important subject. It was with this in mind and not with the idea of attempting to disprove any of Cubberley's statements that this study was made.

The co-operation of eight superintendents of schools in Washington, Oregon, Idaho, and California was obtained, and the following

[1] Ellwood P. Cubberley, *The Principal and His School*. Boston: Houghton Mifflin Co., 1923. Pp. xviii+572.

questionnaire was answered by a representative number of elementary-school teachers from each of the towns and cities:

1. Have you taught under a man principal?
2. Have you taught under a woman principal?
3. Which do you prefer?
4. Why?
5. Briefly stated, what should be the chief characteristics of a good elementary-school principal?
6. Which of these characteristics does an elementary-school principal usually lack?

The superintendent or supervisor was asked to distribute the questionnaires, and they were returned to the superintendent or supervisor without having been seen by the principal. The teachers were not asked to sign the questionnaires. It was thus hoped to secure fair, unbiased answers from all. A number of excerpts from the questionnaires are included in this article, and the reader may judge as to the reliability of the answers obtained. Undoubtedly, the answers of many of the teachers were determined by their relations with their present principals rather than by their contact with all of the principals with whom they have worked. This is only natural, however, for our recent experiences are normally the most vivid.

Table I shows the replies of 494 teachers to the first three questions. Nearly all of the 265 teachers who indicated no preference made a statement similar to this: "Personality, not sex, counts."

TABLE I

City	Experience			Preference		
	Men Principals	Women Principals	Men and Women Principals	Men Principals	Women Principals	None
1.....	14	11	125	52	34	64
2.....	9	0	5	4	1	9
3.....	2	2	3	2	2	3
4.....	0	9	9	4	6	8
5.....	23	28	120	53	17	101
6.....	1	0	6	4	0	3
7.....	8	0	9	9	1	7
8.....	49	4	57	37	3	70
Total...	106	54	334	165	64	265

An analysis of the answers of those teachers who prefer men principals showed that the following factors were mentioned more frequently than any others: "Broad-mindedness," "does not harp on little things," and "more impersonal in criticisms." The teachers in the small towns prefer a man because he is "a better disciplinarian." The following are a few of the reasons given for preferring a man principal:

In every case where I have had personal contact, the man has been broader, more open-minded, less concerned with trivial details, and more prone to stand by his own convictions regardless of his superiors.

He is primarily interested in the big things and in results. He leaves the petty details to the teacher. He is more careful of his teachers' feelings and does not use teachers' meetings to reprimand individuals.

In a strenuous system the women principals, in some cases, become too tense and worry themselves and their teachers too much about the "how" instead of the "what."

Women are too exacting about minor details that are of little importance. Women principals are more conscientious and work so hard themselves that they are likely to overwork their teachers.

Most of the teachers showing preference for women principals stated that they are "more sympathetic and systematic." The general opinion seems to be that the best type of woman is attracted to the elementary-school principalship, which is not true in the case of men. The following are some of the typical answers:

A woman works harder, is more conscientious, and usually has had more actual classroom experience. She is usually a better disciplinarian.

More capable. It seems to me that they are promoted to the position because of ability rather than because the Lord happened to make them men.

Women seem more accurate in their work. The principalship of grade schools does not seem to attract, except rarely, the better type of men.

They are less partial and more systematic and usually spend more time keeping up educationally.

She gives her time to her school business.

Women are more likely to have a better understanding of children and how to handle them.

Women are more helpful, attend to details, and strive to attain a higher standard; on the whole, they are more conscientious.

In answer to the question concerning "the chief characteristics of a good elementary-school principal" many traits were listed. As

might have been expected, no one characteristic was mentioned by all of the teachers, but a majority of them mentioned tact, ability to discipline well, and an appreciation of the points of view of the parent, the teacher, and the pupil. A few of the answers to this question follow:

Sympathy, broad-mindedness, absolute freedom from partiality, co-operation, utter honesty—not only of deed but of attitude—the ability to criticize without arousing antagonism (tact), the habit of praise.

Should be discriminating enough to know a good teacher from a poor one, wise enough to let the former alone, and courageous enough to get rid of the latter.

Alert and open-minded, kind, patient, reliable, courteous, co-operating with all, sympathetic, just, genuinely and deeply interested in all departments, impartial.

A good disciplinarian, familiar with all of the work of the grades and with the home life of the community.

Executive ability, calmness of temperament, decisiveness, impartiality; a sense of humor often eases the strain and removes the squeak.

Kindliness, knowledge of subjects taught and of child nature at the different ages, carefulness and watchfulness over children and premises.

Friendly with all teachers but familiar with none; confiding in none of them regarding school matters that do not especially concern this one teacher.

The final question was, "Which of these characteristics does an elementary-school principal usually lack?" Here, again, the answers vary but not so much as might be expected. By actual tabulation, the five characteristics mentioned most frequently were: tact, impartiality, sense of humor, ability to get the points of view of the teacher and the pupil, and sympathy.

Cubberley briefly sums up the qualifications as follows:

Such a relationship calls for many executive qualities, some of which unfortunately are not possessed by the majority of school people. Especially does it call for tact, intelligence, convictions, good common sense, deep personal loyalty, technical knowledge, and a type of professional skill not always found in those who think they would make good school principals.[1]

This statement resembles closely the characteristics listed as lacking by the 494 teachers. If the prospective elementary-school principal is not willing to take the word of Cubberley and the ele-

[1] Ellwood P. Cubberley, *op. cit.*, p. 19.

mentary-school principals who helped to inspire his writing, then this indictment by experienced teachers should help to convince him that there are certain necessary qualifications that he must possess which cannot be injected into him in the university. If he does not possess these characteristics, then he certainly is not going to add to the prestige of the profession which he expects to enter.

The indictment is stronger, however, in the case of those who are now employed as principals. These teachers' statements are not hypothetical; they are not based on opinions obtained from a textbook; they are based on the teachers' experiences with principals who are on the payrolls today. If these principals have the proper amount of self-respect, they will make a personal inventory, correct those faults that are easily corrected, and try to develop the necessary characteristics that they do not now possess.

The writer does not wish to be misunderstood. All principals were not criticized, and some of the teachers frankly stated that in listing the characteristics "of a good elementary-school principal" they enumerated the outstanding traits of their present principals. However, no one is perfect, and when our teachers have given us a glimpse of the ideal, it behooves each of us to take at least one little peep into the mirror.

CHARACTERISTIC AND SIGNIFICANT DIFFERENCES BETWEEN X AND Z PUPILS IN THE DETROIT PUBLIC SCHOOLS

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Detroit, in classifying the pupils into X, Y, and Z groups, has provided for greater individual development than was possible under the traditional system. This is obvious because the range of ability in each section is now comparatively small and academic requirements vary with each group. The classification has reached Grade IV A.

The children are given the Detroit First-Grade Intelligence Test just before entering the first grade. On the basis of this group examination, the pupils are placed in an X section if they receive a rating of A or B; in a Y section if they have a rating of C+, C, or C−; and in a Z section if their rating is D or E. The X group contains approximately the highest 20 per cent; the Z group, the lowest 20 per cent. Since this classification is subject to correction in case a child has not done justice to himself on the test, it seems reasonable to assume that the X section contains the bright children, and the Z section, the dullards.

The parents have not questioned the grouping of the children, although there have been a few misunderstandings. One mother asked the teacher: "Why ma Sammie done been marked de Z's. He done neva been sick in his life." Another wrote to the newspaper Question Box to ask if her boy would outgrow his slowness. She wrote: "He is near the end of the alphabet, in the X section." Most parents have a sublime faith in our schools, especially if their children do not have to repeat a grade, for, with the standards of attainment based on the general ability of a group, there is, naturally, a minimum amount of failure.

The number of children who receive a rating of A or B varies in different localities. We find a greater percentage in a good

neighborhood than in a poor one, but no school has a monopoly on either brightness or dulness. We have many children who have had meager constructive experiences and also many who are handicapped by hearing only a foreign language. In our experimental class of first-grade children, little Anna, six years of age, with a mental age of eight years, hears almost no English at home, and the child's expressions are ludicrous at times. She told the principal of the school that one of the boys was absent because he had "swallows." The teacher hastened to explain to the mystified principal that the boy had a sore throat. Anna's development in the schoolroom is a joy and a revelation to all. Her I.Q. is 125.

Good environment, effective home training, and adequate school instruction contribute, obviously, to a child's development, but the fact remains that the most important single factor is his inherent mental capacity. It is the purpose of this article to present some traits which seem to be characteristic of superior or inferior intelligence.

1. There are physical differences. The children in the X section, as a rule, are alert, bright-eyed, and full of life. They possess a rhythmic sense and good motor co-ordination. The children in the Z section usually lack rhythmic sense; they have difficulty in skipping; they cannot catch a ball; they lack poise; they move too slowly or ineffectually in playing a game.

The children in the X section usually are superior physically so far as height and weight are concerned. They also have less illness as judged by school attendance.

In our experimental class, the Z group had four times as many cases of speech defect, three times as many cases of enlarged tonsils, and a correspondingly high percentage of other physical disabilities in comparison with the X children. This condition is substantiated by a report from eighty teachers from the first, second, and third grades who have X and Z or X, Y, and Z groups in their classrooms. There seems to be a positive correlation between physical condition and intelligence.

2. There are numerous mental differences. Bright children are more observing. In one first-grade classroom the teacher labeled different articles in the room, such as chair, door, table, etc. Later

she put flash cards with these words printed on them into the packet of regularly taught words. All of the X group, except two who had had prolonged absences, recognized all of the words; none of the Z's knew them; in fact, they had not noticed the labels at all.

A year later in an individual test this same group was asked the day of the week, the month, and the year. The children kept a daily calendar to record the weather, but no particular emphasis was placed on the date. Every child in the X group answered correctly, but none of the Z's did. All of the X group knew whether it was morning or afternoon, in contrast with 45 per cent of the Z section. Environment seems to have little effect on dull children.

Bright children usually have a better memory. This is not to be confused with the meaningless memory often found in low-grade intelligence. They pay better attention and so receive more vivid impressions. They are able to combine these various impressions and to recall the related whole. Rote memory tests revealed the bright pupils three years advanced, and logical memory tests revealed them four years advanced for chronological age. Not only do the X children have a better memory, but they are able to recall relevant ideas at the proper time.

A bright child has better judgment and reasons better. A dull child will continue to do a thing in a particular way even when conditions are changed and a different reaction seems obvious. Earl, from the Z section, has been taught to hold the flag in the morning flag salute. He knows that the exercise takes place just after entering school in the morning, but over and over again he gets ready for the salute in the afternoon. The act has become automatic, but his perception and judgment are wrong.

The superior child is able to draw conclusions and to apply principles. He can rate his work. If a bright pupil fails in an assignment, especially in the upper grades, he knows "why." The dull pupil never does. He thinks that his work is as good as that of the other pupils in the class.

In the case of a test, the dull child invariably answers "I don't know" to something beyond his understanding. The bright child asks for help or tells why he does not know the answer. In the test question, "What ought you to say when someone asks your

opinion about a person you do not know very well," three of the six- and seven-year-old children in the first grade said, "If you tell me 'opinion,' I can answer it. You know I am only an A first."

Experience is fundamental to good judgment and reasoning. The pupils in the Z group have had the same environmental influences, but their associations have been so inadequate or faulty that they are not useful in solving new problems. For each slightly different situation, they need help to enable them to respond correctly. In the Chassell test of "ability to weigh foreseen consequences" the highest correlation found was that with mental age. The achievement quotient showed a negative correlation.

Bright children are more resourceful; they always rise to the occasion and so find opportunities for self-expression. The pupils in our special advanced class (seventh- and eighth-grade pupils) found themselves without a teacher on "Open Night." They had previously prepared a program, and so various pupils conducted the recitations. Unfortunately, the work was presented so quickly that there remained twenty minutes before dismissal—a disconcerting and awkward situation even for a teacher. The children quickly conceived the idea of calling on the fathers and mothers for their points of view on the history lesson. The discussion which followed was so interesting that the class was not ready for dismissal when the bell sounded.

The interest of the X child is sustained, while the Z child tires easily. Eight-year-old children in a third-grade X group worked out the story of Pinnochio. They designed the costumes, wrote the play, and trained the speakers. At the end of the term, as there had been no opportunity to give the play in the auditorium, they carried the work into the next teacher's room and finally gave it before the school. Dull children cannot take leading parts in working out projects because they lack in both initiative and sustained attention. They have to be given the simpler tasks, but even in doing these they need constant reminders from their teacher and classmates. Slow children never seem to be at the kindling point. While the teacher is explaining a problem or telling a story, they may, indeed, apparently sit in rapt attention; but when called on to recite, their response often justifies the remark, "Nobody home."

A bright child is stimulated by finding something that he does not know. If something new is mentioned in class, he wants to know all about it. He is eager to obtain information and knowledge. After Edison's list of test questions was printed in the daily papers, our special advanced class annoyed the school librarian with requests for questions. "What kind?" "Any kind; we want to see how many we know." They were disappointed not to find available standard lists of questions on all subjects. In the X sections of the primary grades, we find this same questioning mind. Just mentioning the name of a book or giving a bit of information is sufficient stimulus. The slow child, however, has less of this curiosity, and definite assignments have to be made because of his lack of ideas.

3. There are differences in moral qualities. The dull child is apparently incapable of weighing values and foreseeing consequences; therefore, he more often becomes a behavior problem. Of course, it is agreed that the bright child misbehaves at times, but usually this is due to lack of material to keep him busy.

We find teachers reporting more cases of tardiness, dishonesty, and untruthfulness in the Z sections than in the X sections. This is substantiated by statements from teachers of our special advanced classes who describe their children as "truthful and straightforward, ready to assume rightful blame, and not tale-bearers."

The bright child is more broad-minded, more tolerant of the opinions of others. He has imagination and reasoning power and can more easily understand both sides of a question.

The bright child accepts responsibilities; the dull child does not. In one class, a bright child and a dull child were appointed to open the lockers previous to the ringing of the school bell. The bright child invariably had the work completed when the dull child arrived. If an X pupil from this same class was absent, he usually sent for his books so that he could study at home, or, on his return, he asked to make up the work. No child in the Z group ever asked to have his books sent home, nor did he feel badly because the rest of the class had gone beyond him.

It is difficult to train dull children in politeness and consideration of others. Bright children are usually courteous, friendly, and sensitive to suggestion and criticism. Just a hint suffices to bring the

desired response, such as, "Polite children say 'Thank you' when receiving a book." A word from the teacher can direct them, a smile encourage them, and a shake of the head admonish them. There is undoubtedly a positive correlation between intelligence and desirable traits and between morality and intelligence. The bright child seems, on the whole, to be richly endowed with the more desirable traits of human nature, while the dull child shows a proportionate lack of them.

4. There are pedagogical differences. There are definite differences in mental make-up, and these set the limits to the ability to learn. Of course, all X children are not excellent in school work, because, since it is just as easy to build for wrong as right response, many have been drilled in faulty methods or have been allowed to contribute an inferior grade of work. The graduates of our special advanced classes and those of a control group were asked if they were generally made to work to the limit of their ability, and 82 per cent gave a negative reply. Dull children, on the other hand, are always driven beyond their power to reason adequately and thus they require an inordinate amount of teacher supervision with meager results.

The bright child is interested in learning for learning's sake. It is hardly necessary for the teacher to appeal to instincts of play, imitation, or even rivalry. He is alive to his own needs. He reads, first, for the sake of being able to say that he can read and, later, because his questioning mind demands the information obtainable from the printed page.

He undoubtedly wastes precious hours of the formative period of his life drilling on material already mastered, relearning facts which no one suspects him of knowing. This is evident in the results of educational tests. In an X group just entering the third grade, we found 41 per cent of the pupils accelerated from one to three semesters in addition and subtraction; a few could divide. On Gray's oral-reading test, 25 per cent had fifth-grade ability; 46 per cent had fourth-grade ability, and 25 per cent had third-grade ability. Similar acceleration was shown in all special advanced classes.

Dull children learn slowly, and they require more drill. They have difficulty in applying the little knowledge they possess.

They cannot make out new phonetic words although they know the sounds of the letters. It took the dull children of a first grade a term and a half to do what the bright group did in three months, and the gap is constantly widening. The bright children in this class have the ability to pronounce new words. They compose and write letters; count to 100 by 2's, 5's, and 10's; add and subtract combinations through 12; and spell and write the II B words.

It is evident that the dull child not only learns more slowly but, because certain concepts lack significance for him, learns differently. The teachers of our slow children reported that they gave simpler instructions, shorter assignments, and used more explanation and demonstration. Not only did the slow pupils make poor progress, but they failed to make deductions, and they could not apply principles. Each slightly different situation required certain definite instructions.

The differences between the superior pupils and the dull pupils cannot be attributed entirely to home environment, home training, or school drill. There is a peculiar inherent arrangement and development of qualities indispensable for success in school learning. Bright children usually seek new experiences through books and mental activity; the dull, through concrete activity or manual participation. The former usually like school because it has been planned for their type of mind; the latter are ready to leave school early to seek self-expression and satisfaction in work. There is a high correlation between intelligence and scholastic attainment.

5. There are also social differences. Although bright and dull children work together in the same classroom, there is less sympathy between them than one would expect, and it is difficult to fuse them in group activities. A bright child usually chooses a partner from his own group, and the dull child does likewise. There is no quarreling between them; neither is there any intimacy.

In our experimental first-grade class every effort has been made to teach the children that everyone can contribute to that which benefits all. The teacher has tried to use such group activities as will allow the slow child to contribute as well as the bright child. The bright child, however, often remarks that the slow child's efforts do not merit the approval of the group.

The children had been writing the story of the Ginger Bread Man. In order that the Z's, who were unable to help in the writing of the book, might contribute, the teacher suggested that the advanced group write the story and the slow group make the pictures for the book. Nathan, six years of age, said, "Oh, no, you should not have it that way! The ones who can draw the best should make the pictures. Let us all try, and then we can choose the best for the book."

Apparently, then, when classification is made on the basis of intelligence, the resulting groups show characteristic differences in physical, moral, pedagogical, and social development. X and Z children differ so fundamentally from each other that it is doubtful if they can be taught to the best advantage in the same classroom. Many teachers feel that they work together best in health education, drawing, and music. From checking their statements with observations in our experimental room, it is evident that even in these subjects the dull children as a group do less satisfactory work than the bright children. The checking of results in these subjects is not accurate, however.

All great contributions to civilization come from the superior groups. The average man makes his contribution by accepting, not hindering, the new ideas for social progress. That is one thing that we should teach.

The superior group will give the world its greatest gifts only when effective means are found for the fullest development of the individual in order that he may plan, invent, and construct; the inferior group will contribute most by accepting competent leadership.

HOW MUCH ARE ILLINOIS PUPILS OUT OF SCHOOL?

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The purpose of this article is to present data showing how many semesters the pupils in a number of Illinois school systems have been out of school.[1] The facts are considered worth presenting because, so far as the writer is aware, no similar data have appeared in print and the problem of time out of school is undoubtedly of importance to the school administrator. The data were obtained from the elementary schools of eighty-two towns and cities, from the rural schools of four counties, and from fifty-one high schools. The approximate number of pupils in these three groups was 53,000, 5,500, and 8,500, respectively. The geographical distribution of the city and town school systems which contributed data is shown in Table I. The words "Northern," "Central," and

TABLE I

Section of State	Number of Elementary-School Systems	Number of High Schools	Percentage of Pupils
Northern	42	25	47
Central	23	16	26
Southern	17	10	27
Total	82	51	100

"Southern" refer to the three sections into which the state of Illinois is divided for the election of members of the Illinois State Teachers Examining Board. It will be seen that the number of schools and the percentage of pupils are larger for the northern section than for either of the other sections. This section, however, includes a much greater portion of the total population of the state

[1] These data were secured in connection with a study of progress, age in grade, and elimination made by the Bureau of Educational Research of the University of Illinois and published as a bulletin of the bureau under the title, *The Progress and Elimination of School Children in Illinois.*

than either the central section or the southern section. Omitting Chicago, which took no part in the study, the percentage of the total population of the state found in the three sections is 45, 29, and 26, respectively. These figures agree very closely with those given for the percentage of pupils. In view of this distribution and the number of pupils included in the study, the statement that the results secured from the city and town schools may be considered fairly typical of the state as a whole seems justifiable. The same cannot be said for the results secured from the rural schools, four counties out of 102 not being enough to constitute a fair sampling. The distribution of the counties, however, is in rather close agreement with the distribution of the total population, two being in the northern part, one in the central part, and one in the southern part.

The elementary-school systems included in the study were classified according to the 1920 population of the cities or towns in which they are located and the high schools according to their total enrolment in the autumn of 1922. Table II shows this classi-

TABLE II

Elementary Schools			High Schools		
Class	Population of City	Number of Systems	Class	Enrolment	Number of Schools
I.....	30,000 or more	3	A.....	500 or more	3
II.....	10,000–29,999	8	B.....	300–499	8
III.....	2,500– 9,999	30	C.....	100–299	24
IV.....	Less than 2,500	41	D.....	1–99 (4 years)	11
			E.....	2 and 3 years	5

fication and also the number of schools in each class. The city and town school systems were also grouped according to the frequency with which promotions were made, that is, according to whether promotions were made annually or semiannually. The rural elementary schools were divided into one-room schools and two- to four-room schools.

The data secured were gathered by means of a rather elaborate questionnaire which called for a number of items of information concerning each pupil. The items included were as follows:

(1) name, (2) resident or non-resident, (3) age last birthday, (4) date of next birthday, (5) date of entering school in this city, (6) grade entered, (7) grade at present, (8) number of times failed of promotion, (9) number of times skipped, (10) number of semesters out of school, and (11) for high schools only: (*a*) number of semester credits, (*b*) number of credits lost by failure, and (*c*) date of entering high school. It will be noted that these items were so chosen that it was possible to make a partial check on the accuracy of the entries. For example, the difference between Items 6 and 7 is equal to the amount of progress made by the pupil. The amount of progress may be determined also through a consideration of Items 5, 8, 9, and 10. Thus many errors were detected. In the cases of about 10,000 pupils the superintendents and principals who contributed the data were asked to correct errors. Practically all of them did so. The statement appears justified, therefore, that the errors remaining in the data were reduced to a minimum. It is, however, difficult to trace the records of pupils back through any considerable length of time with perfect accuracy, so that undoubtedly a few errors remain. The time included was that from the entrance of each pupil into the school system in which he was found to the autumn of 1922, the date of the study. No attempt was made to secure records of the time previously spent by pupils in other school systems because it was believed that it would be impossible to do so with even a fair degree of accuracy.

Table III presents by grades the general distribution of the number of semesters out of school. It may be seen from this table that of the pupils who had been out of school about three-quarters of the city and rural elementary-school pupils and about one-half of the high-school pupils had been out of school only one semester. The greatest amount of time that any pupil in the city elementary schools had been out of school was ten semesters; in the rural elementary schools, six semesters; and in the high schools, nine semesters. The average amount of time that each pupil had been out of school was 1.39 semesters for the pupils in the city elementary schools, 1.45 semesters for the pupils in the rural elementary schools, and 1.76 semesters for the pupils in the high schools. The difference between the averages for the city

and the rural elementary-school pupils is probably not great enough to be very significant, but the difference between the elementary-school and high-school averages is important. This difference

TABLE III

THE NUMBER OF PUPILS OUT OF SCHOOL THE SPECIFIED NUMBER OF SEMESTERS

GRADE	NUMBER OF SEMESTERS OUT OF SCHOOL										TOTAL NUMBER OF PUPILS OUT OF SCHOOL	AVERAGE NUMBER OF SEMESTERS OUT OF SCHOOL PER PUPIL
	1	2	3	4	5	6	7	8	9	10		
	City Elementary Schools											
I	99	15	....	1	....	....	....	....	....	....	115	1.16
II	91	25	1	4	2	1	....	....	....	....	124	1.42
III	158	32	4	4	2	....	....	1	....	....	201	1.33
IV	204	49	4	10	....	1	....	....	....	1	269	1.38
V	222	55	6	5	3	2	....	2	....	....	295	1.40
VI	240	64	9	7	1	3	....	1	....	....	325	1.40
VII	197	67	8	10	2	6	....	....	....	....	290	1.52
VIII	160	45	5	3	1	2	....	1	....	....	217	1.39
Total	1,371	352	37	44	11	15	....	5	....	1	1,836	1.39
	Rural Elementary Schools											
I	24	3	2	....	....	....	....	....	....	....	29	1.24
II	11	1	....	....	....	....	....	....	....	....	12	1.08
III	17	7	....	1	....	....	....	....	....	....	25	1.40
IV	8	7	1	....	....	....	....	....	....	....	16	1.56
V	21	7	1	2	....	....	....	....	....	....	31	1.48
VI	16	2	....	2	....	....	....	....	....	....	20	1.40
VII	21	5	3	....	....	....	....	....	....	....	29	1.38
VIII	13	5	2	3	....	1	....	....	....	....	24	1.96
Total	131	37	9	8	....	1	....	....	....	....	186	1.45
	High Schools											
IX	84	63	4	8	2	3	....	1	....	....	165	1.76
X	67	49	5	6	1	2	1	....	1	....	132	1.80
XI	57	32	9	5	1	....	....	1	....	....	105	1.72
XII	35	26	4	4	1	1	....	....	....	....	71	1.77
Total	243	170	22	23	5	6	1	2	1	....	473	1.76

would naturally be expected, however, as the records of the high-school pupils include a longer period of time than do those of the elementary-school pupils and therefore would be likely to show more time out of school. In general, it cannot be said that there is any

definite relation between the average amount of time out of school and the school grade. The average for Grade I of the city elementary schools is markedly lower than the average for any other grade, but the average for Grade II is next to the highest, whereas in the rural elementary schools the average for Grade II is the lowest.

Although the facts presented in this table are of interest as showing the general distribution, they must be compared with certain other facts to show their real significance. Table IV presents certain indices of time out of school that are based on the data given and also on the total number of pupils in school and the total time they have spent therein. The "Percentage of Pupils Out of School" is the percentage that the number of pupils who have been out of school one or more semesters is of the total number of pupils in the school system. The "Average Number of Semesters Out of School per Pupil Actually Out of School" is the average number of semesters missed by each pupil who has been out of school. It is obtained by dividing the total number of semesters out of school by the number of pupils contributing to that total—that is, the number of pupils who actually missed one or more semesters. It is the same figure as that given in the last column of Table III. The "Average Number of Semesters Out of School per Pupil in School" is the average number of semesters out of school for each pupil in the school system, regardless of whether he was actually out of school or not. In other words, it is the total number of semesters out of school divided by the total number of pupils in school. It may also be computed by multiplying the average number of semesters out of school per pupil actually out of school by the percentage of pupils out of school. The "Percentage of Time Out of School" is the percentage that the time out of school is of the total time that all of the pupils spent in school. It shows the proportion of time really lost by pupils being out of school and is the most significant of the four indices given.

The data in Table IV show that in both the city and the rural elementary schools about one pupil out of thirty had been out of school; in the high schools the proportion is much higher, being about one pupil out of eighteen. As has been stated, the average number of semesters missed by each city elementary-school pupil

TABLE IV

DATA CONCERNING TIME OUT OF SCHOOL

	Percentage of Pupils Out of School	Average Number of Semesters Out of School per Pupil Actually Out of School	Average Number of Semesters Out of School per Pupil in School	Percentage of Time Out of School
	Elementary Schools			
Semester promotion:				
Class I	3.3	1.21	.04	0.8
Class II	3.7	1.36	.05	0.8
Class III	4.2	1.55	.07	1.2
Class IV	4.5	1.24	.06	1.0
Total	3.9	1.40	.05	1.0
Annual promotion:				
Class I	.....	.....	.....	.....
Class II	3.0	1.33	.04	0.7
Class III	3.0	1.38	.04	0.8
Class IV	3.4	1.43	.05	0.8
Total	3.1	1.39	.04	0.8
Semester and annual promotion	3.3	1.39	.05	1.0
Rural schools:				
1 room	3.6	1.45	.05	1.0
2–4 rooms	1.7	1.50	.03	0.4
Total	3.4	1.45	.05	0.9
Highest	12.0	3.67	.18	2.9
Lowest	0.0	0.00	.00	0.0
	High Schools			
Semester promotion:				
Class A	9.0	1.77	.16	1.9
Class B	4.4	1.91	.08	1.6
Class C	3.5	1.50	.05	0.5
Class D	.....	.....	.....	.....
Class E	.....	.....	.....	.....
Total	6.5	1.78	.12	1.5
Annual promotion:				
Class A	.....	.....	.....	.....
Class B	2.4	2.00	.05	0.5
Class C	4.1	1.73	.07	0.8
Class D	8.9	1.65	.15	1.2
Class E	4.4	2.00	.09	0.8
Total	4.5	1.74	.08	0.8
Semester and annual promotion	5.5	1.76	.10	1.1
Highest	22.0	4.00	.30	9.3
Lowest	0.5	1.00	.01	0.1

actually out of school was 1.39; by each rural-school pupil, 1.45; and by each high-school pupil, 1.76. In terms of each pupil in school the number of semesters missed was .05, .05, and .10, respectively. The percentage of time out of school was 1.0, 0.9, and 1.1, respectively. These indices show the same facts as Table III—there is little difference between the city and the rural elementary schools but considerably more difference between the elementary schools and the high schools.

There appears to be a relation between the size of the school system and the percentage of elementary-school pupils out of school. The four classes of elementary schools having semester promotion show definite increases in the percentage of pupils out of school from Class I to Class IV. The tendency is not so definite in the case of the schools having annual promotion but is still present. It seems safe to say, therefore, that the larger the school system, the smaller the percentage of pupils out of school. There are at least two possible explanations of this tendency. One is that the compulsory-attendance law is more rigidly enforced in the larger school systems. The second is that in the small school systems many of the teachers know almost everyone in the town, and, therefore, the records secured are more accurate. There is something of the same tendency shown by the other three indices, especially the number of semesters out of school per pupil actually out. In the case of the high schools, however, the figures are so irregular that they do not support either this conclusion or its opposite.

There seems to be some connection between the frequency of promotion and the percentage of pupils out of school in the case of both the elementary schools and the high schools. In both types of school the percentage of pupils out of school is greater in those systems which have semiannual promotion than in those which have annual promotion. This is probably due to the fact that it is a less serious matter to be out of school a semester in a school system having semiannual promotion as one merely loses one semester's work, whereas in a school system having annual promotion the loss of one semester may cause failure in the whole year's work. In this case also the other three indices tend to support the evidence offered by the percentage of pupils out of school.

A marked difference in the percentage of pupils out of school and also in the third and fourth indices may be noted between rural one-room schools and rural two- to four-room schools. Although the number of the two- to four-room schools included is so small that the data therefrom are probably not fairly representative, the difference is so large that it is probably real; that is to say, rural two- to four-room schools appear to be considerably more efficient than rural one-room schools in preventing pupils from being out of school. Indeed, their showing is distinctly better than that of the city elementary schools. There is little difference, however, between the one-room schools and the city elementary schools with respect to the percentage of pupils out of school.

Probably the most noticeable fact shown by the complete table of indices for separate school systems is the great variability existing. This is shown to some extent also by the two rows of figures at the bottom of each half of the table. The first of these gives the indices for the school systems in which they were the greatest and the second those for the school systems in which they were the smallest. Among the elementary schools there were some in which no pupils had been out of school, others in which almost one pupil out of every eight had been out of school. The range in the number of semesters out of school per pupil actually out of school was from 0.0 to 3.67; in the number of semesters out of school per pupil in school, from 0.0 to .18. The greatest percentage of time out of school was 2.9. The ranges in the high schools were even greater, although the minima were not so low. One high school contained only one pupil in 200 who had been out of school, while in another about two out of nine had missed one or more semesters. The average time missed varied from one to four semesters. For each pupil in school it ranged from .01 to .30. The percentage of time out of school varied from .1 to 9.3; that is, in one high school the percentage of time missed was almost 100 times as great as in another. In no case were the highest and lowest figures very much higher or lower, respectively, than those for several other school systems. Hence, it cannot be said that the extreme variability was caused by one or two school systems.

The fact that the data show that in a number of school systems the time lost has been reduced to a very small amount indicates that this should be possible elsewhere. This does not mean that absolute uniformity can or should be expected. Even though the school authorities in all communities should put forth maximum efforts to secure regular attendance, the variations in local conditions would prevent such uniformity. Among the causes that might be operative is the fact that the general health of some communities is better than that of others. Also some communities have a comparatively large floating population; this renders it almost impossible to locate promptly all children of school age and to ascertain their ages when they are located. It must be recognized, too, that some of the differences in the data collected are due to local practices in the manner of keeping records. For example, one school system might record a pupil who had been in school but one or two days in a given semester as having been in school that semester, whereas another school system might record him as having been out of school the whole semester. It is true that these causes can be controlled to some extent, but, at least under present conditions, this control cannot be complete. Allowing, however, for the effect of these and any other variable factors, the conclusion that much of the time lost is due to a lax enforcement of the compulsory-attendance law seems unavoidable. The writer cannot believe that in any community it is necessary that as many children be out of school or that they be out of school as much as was the case in a number of the school systems which contributed data. The number of elementary-school systems in which not more than one pupil out of fifty missed as much as one semester is great enough that this seems to be a reasonable maximum. For the other indices the following maxima are suggested: 1.5 semesters out of school per pupil actually out, .03 semester out of school per pupil in school, and .6 per cent of time out of school. For high schools the maxima should probably be slightly higher. In suggesting these maxima the writer has in mind the fact that they are the upper limits above which the time out of school need not rise if the school authorities enforce the law properly.

In connection with the use of different indices the question naturally arises as to the relation between them; that is, does the fact that one index is high indicate that the other indices are likely to be high also? To secure some evidence on this point the coefficients of correlation between the various pairs of indices were computed and found to be as follows: the percentage of pupils out of school with the number of semesters out of school per pupil actually out of school, $-.02\pm.06$; the percentage of pupils out of school with the number of semesters out of school per pupil in school, $.90\pm.01$; the percentage of pupils out of school with the percentage of time out of school, $.73\pm.03$; the number of semesters out of school per pupil actually out of school with the number of semesters out of school per pupil in school, $.17\pm.06$; the number of semesters out of school per pupil actually out of school with the percentage of time out of school, $.13\pm.06$; the number of semesters out of school per pupil in school with the percentage of time out of school, $.81\pm.02$. These coefficients show that in three cases the correlations are rather high; in each of the other three cases the correlation is so low as to be practically non-existent. As the product of the percentage of pupils out of school and the number of semesters out of school per pupil actually out of school is the number of semesters out of school per pupil in school, a high correlation would be expected between each of the first two and the third. This expectation is fulfilled in the case of the correlation between the percentage of pupils out of school and the number of semesters out of school per pupil in school, but not in the other case. The variation in the percentage of pupils out of school is so much greater than the variation in the number of semesters out of school per pupil out of school that the former has a much greater influence in determining the number of semesters out of school per pupil in school. Likewise, the percentage of pupils out of school has a rather high correlation with the percentage of time out of school and is evidently a large contributing factor thereto. Naturally, indices three and four show a high degree of correlation.

On a priori grounds it might be expected that the percentage of pupils out of school and the number of semesters out of school per pupil out of school would exhibit a high degree of correlation.

If the non-enforcement of the compulsory-attendance law is a chief factor in causing time out of school, it would seem that it would operate to allow more pupils to be out of school and each pupil to be out of school a longer time. The same result might also be expected from poor health conditions. Apparently, however, this is not the case with regard to either of these factors or any other factors.

Probably the most important question that arises in connection with time out of school is that of its effect on the progress, age in grade, elimination, and achievement of the pupils in school. No data were gathered in this investigation which afford a basis for a study of the relation of time out of school and achievement.[1] The relation of time out of school to the other three measures of efficiency was, however, studied. Coefficients of correlations were computed between the various indices of time out of school and certain indices of progress, age in grade, and elimination. These coefficients are not given in detail, all of them being less than $.14 \pm .06$. Therefore, it cannot be said that they show any relation between time out of school and progress, age in grade, or elimination. It must be borne in mind, however, that the indices which form the basis of the correlation tables are averages for whole school systems. Therefore, the only meaning that can be attached to the small coefficients obtained is that the average time out of school in a school system is no indication of the average progress, average age in grade, or average elimination in the same system. For an individual pupil it is, of course, perfectly clear that losing time may alter his age-grade status. A majority of the pupils who are out of school as much as a semester at a time do not make up the work on their return. Hence, the conclusion must not be drawn that the loss of a large amount of time by the pupils of a school system does not have an undesirable effect.

[1] Some data on this point are presented by the writer in an article entitled, "The Effect of Attendance upon School Achievement," *Journal of Educational Research*, VIII (December, 1923), 422–32.

ACCESSORY CAUSES OF FIRST-GRADE RETARDATION

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On January 18, 1924, one week before the end of the first half of the school year 1923–24, the following letter was sent to all teachers of first-grade classes in the Worcester public schools:

Throughout the country 25 per cent of the school population repeats the first grade. This retardation is generally attributed to the fact that sufficient mental maturity to deal with school subjects is frequently not attained at the chronological age of six. As every first-grade teacher knows, however, there are other contributing causes which, in the aggregate, markedly affect the situation, as, for example, poor attendance, caused by children's epidemics, colds and digestive disturbances, surgical operations incident on school entrance, and parental feeling that training in this grade may be interrupted without harmful results; frequent moving, which breaks the continuity of training and checks the initial formation of good habits; language handicap in the case of children of recent immigrants; unfortunate school conditions, double sessions, too large classes to allow teachers to give as much individual help as beginners need. To help in an analysis of the local situation, will you be so kind as to answer the following questions and return them one week from date?

Every one of the 130 first-grade teachers answered the questionnaire:

1. How many names have been entered on your register during the half-year ending January 25, 1924? Total, 5,202.

2. How many pupils are there now in your room? Total, 4,437.

3. How many of these are to repeat the grade? Total, 1,103.

4. How many recommended for promotion do you consider unfitted for the work of the next grade? Total, 163.

5. How many of those promoted pleased you by unexpected progress in the face of difficulties? Total, 382.

The difference between the totals reported for Questions 1 and 2 does not indicate, of course, that 765 children left school. It simply calls attention to the shifting nature of the school population. To borrow an expression from the business world, the turnover averages 17 per cent.

The replies to Question 3 show that 24.9 per cent of the first-graders were to repeat the half-year's work. Children are often promoted because they have already repeated the grade or because they are large and old, in the case of foreign children, or because they must make way for newcomers. The 163 children represented in the replies to Question 4 are of this type. If these also were retained in the grade, the percentage of children repeating the half-year's work would rise to 28.5.

Sometimes additional information in reply to Question 4 was given by the teachers in the form of such notes as the following:

There are only seven in this grade, and, since they have already repeated, it seems advisable to promote the whole class.

I am promoting four children who are very large and old.

I am promoting three children who have been two and one-half years in Grade I B. They seem ready for Grade I A but are so slow that they may fall behind again.

I am promoting one child of twelve years and nine months of age and one of eight years and seven months because they have previously repeated.

I am doubtful about five of the children, but, because I am promoting to myself, I can give them the benefit of the doubt.

To sum up the situation, some children are promoted because the teacher is hopeful for their success and others because she is hopeless of it. In most cities the first-grade teacher is the only teacher obliged to keep feeble-minded children in her room for several years. The special school or ungraded class removes this burden from the grades above the first.

The few comments made in connection with the answers to Question 5 mention cases of recently arrived foreign-born children who satisfactorily met the language requirements of the grade and of children who successfully finished the term's work in spite of ill health and long-continued absence. Some children with mediocre ability and marked handicaps succeed because of their interest and determination.

The second part of the questionnaire deals with individual children. Of the 1,103 children who were to repeat the grade, 609, or 55.2 per cent, were boys, and 494, or 44.8 per cent, were girls.

The ages in years and months of the 1,103 children retained in Grade I are shown in Table I. The age factor loses any clear-cut significance because two groups of children are involved, those entering September, 1923, not to be promoted from Grade I B, and those entering January, 1923, not to be promoted from Grade I A. One hundred and eighteen children, or 10.7 per cent, were eight years of age or older.

One hundred and fifty-nine of the 1,103 children had attended two schools during the half-year, seven children, three schools; and one child, four schools. One hundred and sixty-seven children, or 15.1 per cent, had attended more than one school. Changing

TABLE I

Age in Years and Months	Boys	Girls	Total	
			Number	Percentage
6–0 to 6– 5	135	127	262	23.7
6–6 to 6–11	213	171	384	34.8
7–0 to 7– 5	128	98	226	20.5
7–6 to 7–11	65	48	113	10.2
8–0 to 8– 5	36	30	66	6.0
8–6 to 8–11	9	10	19	1.7
9–0 to 9– 5	11	4	15	1.4
9–6 to 9–11	7	2	9	.8
10–0 to 10– 5	3	0	3	.3
10–6 to 10–11	1	3	4	.4
11	1	0	1	.1
12	0	1	1	.1
Total	609	494	1,103	100.0

schools during the term may check a child's progress in any grade, but it probably has a peculiar significance at this period when attitudes and habits are forming. A six-year-old child who, during five months, attends two schools, three schools, or, in the extreme case recorded, four schools, has to make so many readjustments to varying physical and social environments that steady, progressive training becomes almost impossible.

Table II shows the number of days of absence for 294 of these 1,103 children. The cases where there were less than thirty half-days of absence, the equivalent of three weeks, have been ignored. Of the repeaters, 26.7 per cent were absent over 15 per cent of the

time; 18.0 per cent, over 20 per cent of the time; and 12.5 per cent, over 25 per cent of the time. Success could hardly be expected for the twenty-six children who were absent one hundred half-days or more, that is, absent from ten to eighteen weeks during a school term of twenty weeks. In fact, to call them repeaters is a possible error in nomenclature. Just how much absence renders school success improbable is a matter for conjecture. An absence of three weeks or more, if it occurs at the beginning of the school year, or if followed by a period of low vitality, sickness being the main cause for absence, is far from being a negligible factor in the case of children of average or less than average ability.

TABLE II

Number of Days of Absence	Number of Children
30– 39	95
40– 49	61
50– 59	40
60– 69	23
70– 79	21
80– 89	22
90– 99	6
100–180	26
Total	294

Considering only the 294 cases where the absences totaled thirty half-days or more, the main cause in 229 cases, or 77.9 per cent, was given as illness. The other sixty-five cases of continued absence were thus accounted for: parental indifference (children under seven do not come under the state truancy law), 19; unfortunate home conditions (illness of parents, poverty, neglect, domestic disagreements, etc.), 10; excluded for impetigo, pediculosis capitis, and kindred disorders, 5; late entrance (children are allowed to enter at any time during the first four weeks, and a child of seven may enter at any time during the year), 9; truancy, 1; quarantine, 6; distance from school, 5; accidental injuries, including automobile accidents, fractures, and the like, 10.

Six hundred and seventy-five, or 61.1 per cent, of the total number of repeaters are of foreign parentage. Those answering the questionnaire were not asked to specify nationality, although

they did so in many cases. Only a small proportion of the recent immigrants in Worcester come from English-speaking countries. Since only the nationality of the father is recorded, the cases where the mother is foreign born and her language is that of the home escape notice. It is indisputable that a partial or total ignorance of the English language is an enormous handicap to the child who is learning to read, reading being the main academic task of the first year. It is obvious also that this handicap is greatly lessened before the child is promoted.

There were 230 repeaters, or 20.9 per cent, who labored under none of the three handicaps: foreign parentage, change of school, and continued absence (forty half-days or more). Of these, 123

TABLE III

	Boys		Girls		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Do you consider the child physically immature?	166	27.3	148	30.0	314	28.5
Do you consider the child of low mentality?	225	36.9	171	34.6	396	35.9
Has the child any physical handicaps?	96	15.8	76	15.4	172	15.6
Is the child quiet and listless?	200	32.8	163	33.0	363	32.9
Is the child restless and inattentive?	254	41.7	167	33.8	421	38.2
Is the child slow and diligent?	132	21.7	129	26.1	261	23.7
Was the child slow in adjusting himself to school conditions?	278	45.6	236	47.8	514	46.6

were boys and 107 were girls. Conversely, 873 children, or 79.1 per cent, had at least one of these handicaps.

Table III gives the positive answers to seven questions. This table may be criticized as recording mere opinions, subjective impressions lacking in objectivity and exactness. It may be remembered, however, that opinions given by teachers of training and experience are not random guesses. Lewis M. Terman, for instance, found a high correlation between first-grade teachers' estimates of the intelligence of their pupils and the results of intelligence tests. In many cases, too, the teacher did not rely on her own judgment but quoted the statement of a specialist. The following comments were made in connection with the question, "Do you consider the child of low mentality?"

The doctor says that she has a mental age of two years.

The doctor calls him a cretin.

This girl, twelve years of age, came from the country with "institutional case" written on her medical card.

Eight years, nine months, pronounced defective.

Nine years, seven months, said to belong in special school.

In other cases where a specialist is not quoted the teacher's comments certainly arouse the feeling that her diagnosis is correct.

Boy, seven years and four months old, one and one-half years in the grade and shows almost no progress.

Five of these children are even now fit to do only the work of a preprimary room.

Am retaining two children who have already been in Grade I two and one-years.

It may be noted that children who repeat the first grade two, three, four, or five times are another element in the problem. Undoubtedly, the questionnaire should have included a question as to how many times the repeater had previously repeated. Is there any reason for ever promoting from the first grade a child with a mental age of two years? If no nearby institution has room for the institutional cases, the subnormal, the pre-epileptic, and the pre-insane, what better place can be found for them than the room where the little newcomers congregate? This continued retaining of problem cases should hardly be called retardation?

The physical handicaps were not always specified. Those frequently mentioned include poor eyesight, speech defects, undernourishment, anemia, and chorea. Less frequent mention is made of partial deafness, heart trouble, convulsions, arthritis, and abnormality.

The four questions, "Is the child quiet and listless?" "Is the child restless and inattentive?" "Is the child slow and diligent?" "Was the child slow in adjusting himself to school conditions?" attempt a classification of the repeaters with regard to their attitude toward school work. This is merely suggestive, of course, a rough grouping of more or less definitely recognizable types.

The question, "Was the child slow in adjusting himself to school conditions?" brought out such explanatory comments as the following:

Mother cannot bear to have him out of her sight.

Only child, used to being with adults.

Extremely shy and timid.

The answers to the question, "Would a less crowded school have increased the child's chance of promotion?" are shown in Table IV. In 43.5 per cent of the cases, more individual help would, in the teacher's opinion, have benefited the child.

The request for additional suggestions brought forth the following:

Late entrance is the chief handicap.

The child vaccinated at school entrance has a week of low vitality at the very beginning of his school life.

A morning session would have greatly increased the chances of promotion in my group.

We changed from single to double sessions, and it seemed as if a month was wasted in readjustment.

TABLE IV

	Yes	No	?	Total
Boys	257	202	150	609
Girls	223	143	128	494
Total	480	345	278	1,103
Per cent	43.5	31.3	25.2	100.0

Suppose that the rating of ten repeaters, the average quota for a first-grade room of forty children, should chance to coincide with the percentages developed from the record of the 1,103. Of the ten, six would be of foreign parentage, four of low mentality, three physically immature, two physically handicapped, two would have attended more than one school during the half-year, and three would have been absent more than thirty half-days. Each child, then, has, on an average, two reasons for failure. Such an assumption may seem far-fetched. A critic might anathematize it in the words of Hollingworth, "Descriptive adjectives and pseudo-quantitative scores are equally subversive of testimonial validity."[1] What cannot be denied is the reality and the complexity of the problem of first-grade retardation.

[1] Harry L. Hollingworth, *Judging Human Character*, p. 99. New York: D. Appleton. & Co., 1922.

THE ADAPTATION OF SUBJECT-MATTER AND INSTRUCTIONAL METHODS TO GRAMMAR-GRADE GROUPS OF VARYING ABILITY

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The children whose work is discussed in this article were members of seventh- and eighth-grade classes and had all taken the Haggerty Intelligence Examination. Some of the pupils had also been given the Stanford-Binet test. Each class had then been divided into three groups according to ability, and these groups were designated by the names, "Alpha," "Beta," and "Delta." The number of pupils reporting at any one time for work in the social studies averaged about thirty-five. Those children formed typical class groups such as are found in any school system.

In handling the work, the groups were subdivided so that not more than six or eight pupils met the teacher at any one time in the little round-table discussions which were held whenever the pupils felt that they were ready to report. Here there was as much freedom from the formal recitation as possible, the work being carried on in a conversational manner, each pupil contributing as he was able or as he was stimulated by a remark of someone else. The only restrictions were those demanded by courtesy. The teacher's task was to see that the discussion was continuous.

The projects used here as illustrations were parts of a correlated course in the social studies, including particularly history, geography, and civics. We found that there was great need for the adaptation of the work to the abilities of the various groups. The brighter pupils were able to work more independently with texts and assignments. They could take a comprehensive problem, such as, "Why do we speak English in America?" and, with the aid of topics and references, work out a satisfactory answer. Little time was required, after this study, for reviewing the facts before the analysis of a whole period, for example, could be made and discussed.

The slower pupils, however, needed to make contacts more frequently with the teacher and with the other pupils of their division during the supervised-study periods. They needed to have more detailed assignments and could handle only a small amount at a time. Since they could not in this way cover as much ground as the brighter pupils and since we wanted them to appreciate the history of our country in its broad sweep, and there was always danger of their becoming lost in the interesting details and forgetting the main trend, many topics that were given to the brighter groups had to be omitted in the case of the slower pupils. Then, too, continuous effort was necessary in order to make the work as concrete and as vivid as possible for these slower pupils, for they could not learn from general statements such as are given in most textbooks for the seventh and eighth grades.

Some of the topics and projects taken up with various classes will serve to illustrate these points. In working out the problem, "Why do we not still belong to England?" we wanted the children to see that two of the main reasons were the spirit of co-operation that developed among the colonies, as shown, for example, in the Mayflower Compact, the New England Confederation, the Struggle with Andros, and Bacon's Rebellion, and the feeling that the colonists were able to take care of themselves, which had come through the ownership of land, town meetings, etc. Most of these topics had already been studied but not in the light of this problem. The Betas worked on the topics separately, but as one assignment, to answer the question, "What does each story show about the colonists?" Then, in the discussion, after pointing out the characteristics which each story indicated, they tried to organize their ideas so as to be able to tell some reasons why we do not still belong to England. To the Alphas, all of the topics were assigned at once, with directions to find the answer to the main problem. Then, in the discussion, the stories were not reproduced, but the time was spent in analyzing the significance of these events and conditions in relation to the break with England. The Deltas studied the first set of topics in four separate assignments to find evidences of the colonies working together. There were group discussions of each of the topics with reproductions of the main points of the stories.

An effort was then made to find out whether a spirit of co-operation would have anything to do with a break with England, but it was necessary to go through the whole list, recalling the stories and making conclusions concerning the development of the feeling of co-operation. The second group of topics was handled in the same way to find evidences on the part of the colonists of the feeling that they were able to care for themselves. After this work, all of the groups went on further with England's part in causing the break. The Alphas and the upper Betas studied through all of the topics before reciting, looking for England's attitude and at the same time noting the evidences of colonial co-operation and independent feeling, but the slower groups read aloud the whole story of the causes of the Revolution in Pratt's *America's Story for America's Children*, Volume V, and then studied in detail only the navigation, manufacturing, and trade laws and the Stamp Act. Throughout, much closer supervision was necessary for the Deltas and the lower Betas.

Similarly, in a VII B class studying the geography of China and Japan from detailed questions assigned on study sheets, the fastest groups were able to cover more questions and to go into the work deeply. In the questions asked and the reports given during the supervised-study period, it was found that these pupils were able to work practically independently and to answer the questions correctly without much help, but the slowest pupils, especially those of the dullest third or fourth—that is, the Deltas—often needed to have the teacher ask supplementary questions in order that they might see the force of what was asked in the study sheets. Sometimes, when a reading or map reference was assigned, these pupils had to have definitely shown to them the part that applied to the question or at least have it brought forcefully to their attention in some way; or they needed to have pointed out or developed the significance of a fact of surface, location, etc.

Some of the questions follow. The Alphas took all of the questions when they were able to do so and cover the ground in the allotted time. Occasionally, an individual who was really capable was unable to work as fast as the other members of his group, perhaps because he was especially curious or because he was not satisfied unless he had exhausted the material. The Betas worked on

all except those questions marked optional, while the Deltas studied only those starred. The character of the questions indicates the basis for assignment. The following is the key to the references:

A=Nellie B. Allen, *Geographical and Industrial Studies—Asia* (Boston: Ginn & Co.)

R=J. W. Redway, *All Around Asia* (New York: Charles Scribner's Sons)

C=F. G. Carpenter, *Geographical Reader—Asia* (Chicago: American Book Co.)

H=Ellsworth Huntington, *Asia, A Geography Reader* (Chicago: Rand, McNally & Co.)

Mc & P=F. M. McMurry and A. E. Parkins, *Advanced Geography* (New York: Macmillan Co.)

T & Mc=R. S. Tarr and F. M. McMurry, *New Geographies, Second Book*

A. New progress of Japan in the last seventy years

I. Introduction

*1. Agriculture and fishing are the industries through which Japan got her early start. Compare China.

*2. Why in something like seventy years has Japan progressed rapidly as compared with China?

II. Beginning of new industries

1. Manufacturing

a) Centers

(1) Osaka

*(*a*) Visit Osaka. For what kind of things will we go shopping? Read about Osaka and its manufacturing: A, p. 409, "Before we leave," to p. 410, bottom of page; or R, pp. 153–54, "But Osaka" to "One can"; or C, pp. 87–88, "Osaka" to "We are surprised," and p. 91, middle paragraph.

(*b*) Why is it called the Manchester of the East?

(*c*) Compare England and its manufacturing.

*(*d*) List the manufactured products discovered in your reading and in the pictures.

*(*e*) Where is Osaka?

(Opt.) (*f*) What is the relation of Kobe to Osaka? Before you answer, note the railroad between the two places. How far apart are the cities? What good is Kobe to Osaka?

(Opt.) (*g*) Read about Kobe: R, pp. 148–50, to "From Kobe"; or C, p. 93, last paragraph.

(2) Kyoto—silk manufacturing

*(*a*) Look at pictures of silk manufacturing in Kyoto: A, pp. 414, 415, 418, 420, 421; R, opposite p. 159; Keystone 600 set, Nos. 536–41.

(Opt.) (*b*) Read about the silk industry: A, pp. 313–21; R, pp. 130, 131; C, pp. 166–69.
(*c*) What is the silk center of Japan?

b) Raw materials
(1) Coal and iron
(*a*) What raw products seem essential for an industrial nation?
(*b*) Can a nation be industrial without coal? Answer this, and then look at the *Statesman's Year-Book* for the exports and imports of Japan; or A, p. 247; or Mc & P, p. 472; or T & Mc, Figs. 550 and 553. Study these carefully.
*(*c*) Read about coal and iron in Japan: A, p. 424, "The mountains," and p. 381, "When we leave"; R, p. 136, "Japan has not."
(Opt.) (*d*) Statistics, accounts, etc., referred to above do not seem to agree, yet really they do. Study them until you can make a statement about the coal and iron in Japan.
*(*e*) Does Japan have anything to take the place of coal? Look at these pictures to see: Figs. 29 and 30.
*(*f*) Is there any coal and iron near? China? Korea? Mc & P, p. 472; or T & Mc, Figs. 550 and 553.
*(*g*) What geographic control, then, made possible this advance toward manufacturing? What examples can you give?
(*h*) What is the relation of manufacturing to the dense population?

In the civic topic, "Capital and Labor," covered in an VIII B class, the Betas read the text and discussed such topics as the following: "How are strikes caused?" "Is labor right?" "Is capital right?" "Who really suffers?" "What attitude has the government taken concerning strikes?" "Should the government interfere?" "Has capital ever done anything to help solve the problem?" "Has labor ever done anything?" "Which do you think should make the advances?" "Can you do anything to help?"

The Alphas read mostly from supplementary material and then spent the time in their group discussions in expressing their opinions on the following questions: "Do you think that labor unions are a good thing?" "Capitalists' associations?" "Why do we have this problem now when the people of the early days never did?" "Are strikes a good thing?" "Should the government attempt to settle quarrels between the two parties?" "Have you any sug-

gestion of a way to settle the problem?" "Do you think co-operation would be a solution?" "Has anyone ever tried it?"

The Deltas had to spend a great deal of time in merely finding out what the difficulty is between capital and labor. They were able to draw the conclusion that self-interest is at the base of it. By means of guiding questions and comparisons with their own experiences, where difficulties were settled through discussion or arbitration or compromise versus force, they were finally able to develop some idea of the value of co-operation.

As the work progressed, we came to realize more and more the need for making the material as concrete as possible. The following illustrations show efforts to meet this demand.

One project or set of projects grew out of the teaching of the civic welfare topics of religion, education, recreation, protection, health, etc. The Betas read about and discussed the lives of the people of colonial times. Some helped in building miniature colonial houses and in dressing dolls in colonial costumes to illustrate their ideas. Applications were then made to the civic problems of today. The Deltas carried out the construction work much farther. They used pictures to supply ideas and not only built houses, a town hall, a block house, etc., from cardboard or other materials but furnished colonial rooms and made models of the tools of the times and of the instruments of punishment, such as stocks and ducking stools. They even showed some old fire-fighting apparatus. They discussed the way these people lived, thought, and spent their time, contrasted our present-day problems of protection, etc., and tried to account for the differences which our changed ways of living and our greater knowledge have brought about.

In an VIII B class, a Delta group, working with the later western movement and the Industrial Revolution, conceived of a plot and dramatized the story of a family going to California. In this they portrayed a runaway son, an Indian attack, a hold-up, followed by swift punishment by the vigilance committee, besides many thrilling but less spectacular hardships of the trail. They also made a territorial expansion map by pasting on an outline map pieces of colored paper to represent the additions of territory. They then

studied to find out simple answers to the question, "How did we secure these?" The Alphas, meanwhile, worked on the problem as such, "How we got our vast territory." Of course, references and topics had to be provided even for the first group, but the Alphas were able to understand a great deal about the political and economic background of this part of our history and to relate it to some extent to our present development. The Betas made the map and gave more detailed responses than did the Deltas to the question, "How did we secure these pieces of territory?" They needed more detailed assignments than did the Alphas, however, in order to avoid waste of time; for example, "How did we get the Louisiana Territory?" "Why did we want it?" "Why was France willing to sell?" "How did the purchase conflict with Jefferson's ideas?"

It was found that the great need in adapting the work is suitable material for the Delta group. There is considerable material, simply and concretely written, about the earlier periods of United States history, but the later periods are very scantily covered, so far as the needs of these pupils are concerned. Good story material, written on about the fifth- or sixth-grade level, so far as difficulty of vocabulary and sentence structure is concerned, but from the social point of view of an older child, would be suitable for these pupils.

The work of adaptation can be carried on with ordinary class groups if the instructor will keep in mind the fact that the pupils in the first division—that is, the Alphas—can work on large units and problems while the Betas and the Deltas must have more detailed assignments and supervision. Then, there is always the problem of the selection of material so that the slower groups may have what is necessary, the old problem of choosing essentials presented in a different light. At the same time, concreteness of material and instruction is important. Careful supervision is necessary if the work is to succeed.

TRANSFER WITHIN A NARROW MENTAL FUNCTION

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Modern psychology does not have implicit faith in the transfer of the operation of a skill developed within one set of data to another set of data. It was once believed that skill developed in any situation would function in all, or almost all, situations. Thus, if a college student developed close reasoning powers in a logic class during his junior and senior years at college, he would, *because of this study*, show close reasoning powers in the affairs of mature life after graduation from college. The evidence does not support this belief.

Characteristic of the whole-or-none attitude of American thinking, when once our faith in general transfer was taken from us by competent research, notably the work of Thorndike, we went over, for some time, to the theory that there was no transfer whatever. We learned exactly what we practiced and nothing more. Addition of whole numbers was a skill developed by adding whole numbers; subtraction of whole numbers was a skill derived from subtracting whole numbers. More specifically, adding 5 and 6 taught us how to add 5 and 6 and nothing else.

Absence of *any* transfer is as false and probably as harmful a notion to use in curriculum construction as its antithesis, complete and magical transfer through the powers of the mind. The problem of transfer at the present time is concerned not with the omnipresence of transfer or its utter absence but with such questions as the following: (1) In what types of skill is there enough transfer to use? (2) On what level of mastery of a complicated skill does transfer in useful amounts begin to operate? (3) In what ways can transfer be facilitated and increased? (4) Are transferred skills or skills acquired in one set of data as strong, as lasting, and as easily operated in another set of data? How much is *lost* by

transfer? (5) Is the amount of loss of skill from the original situation to the new situation a function of the dissimilarity of the new situation to the original situation?

The present status of the transfer problem seems to be: transfer exists to the extent that the same skills are used in the new situation. Transfer is often small because we fail to realize that the same skills could be used. If we want transfer or the applications of skills acquired in one situation to operate in another situation, we must train in the ability to look for uses of old skills. The old skills will not transfer by themselves except when the similarities are very close.

Just as those who would use imitation as a technique of learning must teach how to imitate, so those who would capitalize on transfer must teach how to transfer if they would profit by the maximum of possible transfer.

We get transfer, then, under these conditions: (1) when the acquired skill is really present in the new situation; (2) when the identical elements in the two situations are so obvious that they operate mechanically. When identical skills exist in the two situations but are somewhat subtle, transfer comes to the extent that we are skilful in finding the identical skills and using them—that is, to the extent that we teach or learn how to transfer.

The fact that we have gotten so little transfer in the past is partly due not to the lack of identical skills—the possibility of transfer—but to our mistake in thinking that transfer is self-operating, which it is in some cases but which it is not in other cases—perhaps the vast majority of cases where transfer would be profitable.

A study is here reported which shows transfer in the narrow mental function of the addition of fractions. It is to be noted that the addition of fractions comes in the learning of arithmetic after the addition of whole numbers so that there are many skills which could be transferred. The transfer reported is that type of transfer which goes on mechanically. The skills transferred are of the type that evidently does not need conscious direction.

A similar study is now in progress which will attempt to measure the amount of transfer possible when far more subtle elements

are involved and the subjects have been taught the technique of conscious transfer. If we get no transfer with very subtle elements across broad functions in this study, it may be due to the fact that transfer is impossible or it may be due to the fact that we do not yet know how to teach the technique of conscious transfer.

We took a group of pupils just beginning to add fractions. We tested these pupils before the experiment to make sure that adding fractions was an accomplishment that they did not possess. We were satisfied on that point quite definitely. We then divided the whole group into two groups as nearly equal in ability as possible. These groups are called A and B.

Both groups were given the same amount of practice in the addition of fractions. Both groups were given the same type of instruction. The practice material given to Group A, however, was so constructed that there was an even and thorough spread in the integers used as denominators. The numbers 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 21, 24, 28, and 30 were present in the drill as denominators with calculated frequency.

Group B was given similar drill with the exception that the numbers 3, 5, 7, 9, 14, 15, 18, 21, 28, and 30 did not appear *at all* in the drill material. The problem is, How much does training in the addition of fractions involving the denominators 2, 4, 6, 8, 10, 12, 16, and 24 transfer to the ability of handling the addition of fractions in which 3, 5, 7, 9, 14, 15, 18, 21, 28, and 30 are used as denominators.

The drill material consisted of ten exercises in addition, two exercises in the reduction of fractions, and one exercise in adding mixed numbers. An analysis of the drill provided for both groups is shown in Tables I and II.

Group A, which practiced all of the integers in the denominators, had the same *total amount* of practice as Group B. Group A practiced any one denominator fewer times because there were more denominators to practice.

Following the period of instruction and drill, two tests were given to both groups on successive days. Each test was divided into two parts. The first part was made up of problems in addi-

tion involving the denominators practiced by both groups. The problems in the second part contained the denominators practiced by Group A but not by Group B. We could then compare the

TABLE I

ADDITION OF FRACTIONS

Number of Examples	Number of Fractions	Denominators	Sum
2.....	2	Same	Less than unity
2.....	2	Same	Unity
2.....	2	Same	More than unity
2.....	2	One denominator is common denominator	Less than unity
2.....	2	One denominator is common denominator	Unity
2.....	2	One denominator is common denominator	More than unity
2.....	2	Common denominator is different	Less than unity
2.....	2	Common denominator is different	More than unity
3.....	More than 2	Same	Less than unity
3.....	More than 2	Same	Unity
3.....	More than 2	Same	Two
3.....	More than 2	Same	More than unity
3.....	More than 2	Largest denominator is L.C.D.	Less than unity
3.....	More than 2	Largest denominator is L.C.D.	More than unity
3.....	More than 2	L.C.D. is different	More than unity

TABLE II

ADDITION OF MIXED NUMBERS

Number of Examples	Number of Digits	Denominators	Sum
2.....	1	Same	Mixed number
3.....	1	One denominator is common denominator	Less than unity
3.....	1	One denominator is common denominator	Unity
3.....	1	One denominator is common denominator	More than unity
3.....	1	One denominator is common denominator	More than 2
3.....	1	L.C.D. is different	Less than unity
3.....	1	L.C.D. is different	More than unity
3.....	1	L.C.D. is different	More than 2
3.....	2	Same	Mixed number
3.....	1 and 2	Same	Mixed number
3.....	2 mixed numbers and 1 whole number	.....	.....
3.....	2 mixed numbers and 1 simple fraction	.....	.....
3.....	1 mixed number, 1 whole number, and 1 simple fraction	.....	.....

performance of the two groups on material that both had practiced and on material that Group A had practiced but Group B had not.

A statistical analysis of the class results was made. This consisted of finding the medians and the upper and lower quartiles of the number of examples attempted and of the number of examples correct in each part of the test for each group. The correlation, together with the probable error, between the number of examples

TABLE III

COMPARISON OF NUMBER OF EXAMPLES ATTEMPTED AND NUMBER OF EXAMPLES CORRECT

	Set I				Set II			
	Test A*		Test B†		Test C*		Test D†	
	Number of Examples Attempted	Number of Examples Correct	Number of Examples Attempted	Number of Examples Correct	Number of Examples Attempted	Number of Examples Correct	Number of Examples Attempted	Number of Examples Correct
	Group A							
Median	18.00	16.33	17.67	15.33	16.00	14.00	15.67	14.50
Lower quartile	16.50	15.25	16.50	13.50	10.50	8.50	12.50	10.50
Upper quartile	18.62	17.50	19.25	18.17	17.50	16.25	19.25	15.50
Range	6–20	4–20	10–20	8–18	8–19	6–17	9–22	8–21
	Group B							
Median	16.50	14.25	14.50	13.38	14.38	13.75	14.25	13.25
Lower quartile	14.25	13.25	13.13	12.31	11.25	11.12	12.48	11.31
Upper quartile	17.69	16.75	18.75	15.75	15.89	14.94	16.24	14.92
Range	10–22	9–22	6–19	4–19	8–21	4–21	11–18	10–18

* Tests A and C involved the denominators practiced by both groups.

† Tests B and D involved the denominators practiced by Group A alone.

correct and the number of examples attempted by each group in each test was determined. Further correlations for each group were found as follows: between the number of attempts in the two parts of each test, between the number of examples correct in the two parts of each test, and between the number of examples correct in the similar parts of the two tests. The results are shown in Tables III, IV, V, and VI.

A comparison of the central tendencies for the two classes brings out the fact that there was, for both classes, a slight loss

in accomplishment in the case of the test having the limited number of denominators as compared with the test having all of the denominators. *The loss for the two groups was very nearly proportional, however.* It can best be accounted for by the inherent difficulty of the denominators, since the group which practiced them lost as much proportionally as the group which did not practice them. Further

TABLE IV

CORRELATION BETWEEN THE NUMBER OF EXAMPLES ATTEMPTED AND THE NUMBER OF EXAMPLES CORRECT

	TEST A		TEST B		TEST C		TEST D	
	Correlation	P.E.	Correlation	P.E.	Correlation	P.E.	Correlation	P.E.
Group A.....	.97	.019	.94	.035	.92	.051	.94	.035
Group B.....	.91	.044	.90	.046	.91	.043	.94	.028

TABLE V

CORRELATION BETWEEN THE NUMBER OF ATTEMPTS IN THE TWO PARTS OF EACH TEST AND THE CORRELATION BETWEEN THE NUMBER OF EXAMPLES CORRECT IN THE TWO PARTS OF EACH TEST

	TESTS A AND B		TESTS C AND D	
	Correlation	P.E.	Correlation	P.E.
	Number of Attempts			
Group A.....	.92	.049	.84	.096
Group B.....	.61	.150	.87	.059
	Number of Examples Correct			
Group A.....	.60	.202	.69	.130
Group B.....	.62	.150	.76	.102

TABLE VI

CORRELATION BETWEEN THE NUMBER OF EXAMPLES CORRECT IN THE SIMILAR PARTS OF THE TWO SETS OF TESTS

	TESTS A AND C		TESTS B AND D	
	Correlation	P.E.	Correlation	P.E.
Group A.....	.91	.053	.66	.170
Group B.....	.47	.180	.73	.110

comparison of the amount of accomplishment warrants the conclusion that there was a high degree of transfer from the familiar to the unfamiliar materials for the group which had limited training.

The correlations between the number of examples attempted and the number of examples correct show practically no variation from Group B with limited training to Group A with general training. This further substantiates the conclusion in favor of transfer.

Transfer did not fail to operate in the place we would logically expect it, namely, in the relation between the number of attempts and the number of examples correct in unfamiliar material. The ratio between the number of examples correct and the number of attempts was almost the same for both groups for all parts of the tests.

The prediction of the *amount* of work which will be done on unfamiliar materials from known amounts on familiar materials is not quite so good as the prediction of the amount of work on new but familiar materials from known amounts on familiar materials. So far as correctness is concerned, however, the two groups behaved similarly. Even the little practice which the first test afforded eliminated the difference in the amount of production from familiar to unfamiliar material on the second test. It may be held that there need be little concern with regard to the denominators of the fractions to be drilled upon, the elements deserving more especial attention being the determining of common denominators, reduction ascending and descending, and the disposal of the whole number part of a fraction in the work with mixed numbers.

It is difficult to account for the unreliable correlation of .47 (P.E.,±.18) for Group B with limited training between the number of examples correct in the parts of the two tests involving familiar materials. It might be the result of carelessness through overlearning, or it might be the result of confusion arising from work with the unfamiliar materials in the second part of the first test.

We have now to account for the fact that in tests pupils work with unfamiliar denominators about as well as with familiar denominators. The following reason is apparently sound: The common denominator *idea* transfers from one group of denominator combinations to another with great ease. The function is so narrow

that the transfer is mechanical and practically complete. Though pupils have never seen $\frac{}{3}$ and $\frac{}{5}$ together in an addition situation, they will know *what* to do from having worked with, say, $\frac{}{4}$ and $\frac{}{10}$. Though never having reduced $\frac{10}{6}$ to 2, they will know what to do because of having reduced $\frac{8}{2}$, $\frac{16}{4}$, etc.

The general technique of handling common denominators, however, is not the only transfer. Evidently the relations between numbers in finding low common denominators and in reducing improper fractions are enough like the relations between numbers taught in multiplying and dividing whole numbers for transfer without loss. We get, then, two transfers into the handling of strange denominators: (*a*) the common denominator idea borrowed from other fraction work, (*b*) the knowledge of relations between whole numbers transferred over to the use of these numbers in the denominator situation. This transfer, since it was unconscious and mechanical, leads us to think that we get transfer not only in the narrow function fraction to fraction but also in the less narrow function whole number to fractions.

This transfer was mechanical and unconscious, for, on questioning the pupils in Group B after the tests, it was evident that they did not realize that they had never worked with the denominators 3, 5, 7, 9, etc., in their drills.

We get transfer in substantial amounts in relatively complex skills, such as handling fractions. *The transfer is possible, however, to the extent that the skills exist to transfer.* The groups experimented with had in their work with whole numbers very carefully constructed drills which guaranteed the mastery of the number combinations. We would not expect 2×5 in the simple skills in whole numbers to transfer to 6×7, but if 2×5 and 6×7, etc., have all been practiced in the simpler skills, they can be trusted to operate later in higher and more involved skills. This to us is evidence for, not against, the position that drills in whole numbers should be painstakingly *built* to guarantee practice on every combination in calculated amount and with calculated frequency.

If distribution of practice is guaranteed in fundamental drills, the mastery of number relations will be present in sufficient quality to facilitate their use, through transfer, in new and more complicated skills.

Educational Writings

REVIEWS AND BOOK NOTES

General text in educational psychology.—To those familiar with Dean Bolton's earlier book, *The Principles of Education*, the publication of a new volume[1] will be very welcome. This book is, in a way, a revision of the former volume. It has, however, numerous omissions and additions. It preserves the interesting, readable quality of the earlier book and, though less voluminous, has an abundance of illustrative material. The book is excellently printed and bound.

As stated in the Preface, this book has been written "for this ever-widening public—the young teachers who wish to get a right start in their profession by becoming acquainted with the principles of the subject; the older teachers who wish to have the results of experiment and research that have met with most favor; and that great number of persons interested in the subject of education who have faith in the boys and girls of today and wish to have a part in making them the worthy citizens of tomorrow."

Following an introductory section devoted to a discussion of the meaning and purpose of education and effective methods of study, the book is divided into three parts, entitled, "The Endowment of the Individual," "Modes of Learning and Behavior," and "Measurement in Educational Psychology." The second part contains the largest amount of material and the widest range of topics. Some of the topics treated are "Learning and Expression through Play," "Motivation and Initiative," "Imagination in Learning and Expression," "Thinking and Learning to Think," and "Transfer of Training." As significant of the change of emphasis in educational thought, the reader notes the fact that no mention is made in the newer volume of such topics as the recapitulation theory and culture epochs while a section is devoted to the subject of educational measurements. In this section are the following chapters: "Measuring Mental Ability," "Comparing Achievement," "Prophesying Performance," and "Vocational Psychology." The author gives excerpts from various standardized intelligence tests and achievement scales with suggestions as to their use. He also points out some of their limitations.

Two valuable features found at the ends of the chapters are suggestive questions for further study and selected lists of references for further reading.

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[1] Frederick E. Bolton, *Everyday Psychology for Teachers*. New York: Charles Scribner's Sons, 1923. Pp. xii+444.

A book on school finance.—Reports of research in school finance are now appearing at a rapid rate. This is fortunate, for there is probably no problem in education today more urgent than the financial problem. Many needed improvements and extensions in our educational program must wait until funds for financing them are provided. In addition to the most urgent problem of how to secure more revenue, there is the important problem of how to equalize educational opportunities in a scientific manner. The solution of these and other financial problems will challenge many educational Solomons.

Of the research students in the field of school finance, none has been more productive than Professor F. H. Swift. His first financial study, *A History of Public Permanent Common School Funds in the United States, 1795–1905,* published in 1911, has remained the classic study on the subject. Since this first contribution, he has prepared many other volumes and several magazine articles on school finance.

Mr. Swift's most recent study[1] is presented as the second volume of a four-volume series. It surveys school finance in Massachusetts, New York, and New Jersey, states selected because they typify eastern practices in school finance. The volume is divided into three parts, each part being devoted to one of the three states. Massachusetts is presented by Swift; and New York and New Jersey, by two of Swift's students, R. A. Graves and E. W. Tiegs.

The three studies show that school costs have mounted kaleidoscopically and that, owing to the factors that cause the increases—namely, increased attendance, improved facilities, and the decrease in the purchasing power of the dollar—costs are likely to continue to increase. This fact must probably be faced everywhere. A second fact emphasized in the report is the inequality in educational opportunity and the ease with which some communities can support their educational programs. The remedy proposed for these inequalities is a larger amount of state aid. The authors recommend that such state aid as is given shall be apportioned on a scientific basis and shall take into account the ability and effort of the local community. Even now, however, there is probably no state that takes into consideration, in giving state aid, ability and effort more than does Massachusetts. Because of this fact, the Massachusetts plan is worthy of serious study by other states.

The volume is well organized and clearly written and is worth reading by students of school finance everywhere. This is particularly true of the part on Massachusetts by Swift.

WARD G. REEDER

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The case method applied to exceptional children in school.—It is becoming increasingly evident that the public schools are displaying greater interest in

[1] Fletcher Harper Swift, Richard A. Graves, and Ernest Walter Tiegs, *Studies in Public School Finance: The East—Massachusetts, New York, New Jersey.* Research Publications of the University of Minnesota, Education Series, No. 2. Minneapolis, Minnesota: University of Minnesota, 1923. Pp. xii+240. $2.00.

the individual problems of school children, particularly the children whose personal traits are very different from those of the so-called average child. One of the difficulties in dealing with children in this individual manner is the lack of a well-developed technique for studying problem cases. A recent publication[1] of the Joint Committee on Methods of Preventing Delinquency, a committee subsidized by the Commonwealth Fund, gives an example of the technique used in an intensive study of three exceptional children. The characteristics of these particular children, as well as a number of other types of cases which make profitable subjects for study, are given in the following paragraph:

> Mildred, Sidney, and Kenneth are only three among the many types of children who present behavior problems: Mildred, of normal intelligence, retarded in school, unhappy, threatened with possible mental disease; Sidney, of superior intelligence, but failing in school, misbehaving and unhappy; Kenneth, of inferior mentality, a school failure, and apparently at the beginning of a delinquent career. Among other types of problem children not a few are essentially normal: they may be spoiled and babied, overpraised and overstimulated; they may be neglected and undervalued, especially in comparison with brothers or sisters; they may be suffering from maladjustments in a school system too rigid to adapt itself to the needs of the individual child. Others are definitely handicapped by permanent mental or physical defects. Still others are warped by association with criminalistic, neurotic, or insane parents. In the kind of work here described, however, emphasis is laid not upon effort to classify these problem children according to types but upon the fact that each one exhibits a special combination of physical, mental, and social disabilities and assets, making up his or her own distinct personality problem [pp. 6–7].

The three cases reported in this book are described in a very interesting manner. In the Appendix there is a summary of the physical and psychological characteristics of these children as determined by tests and measurements. While the material in the Appendix is of special value to the expert social worker, the descriptions in the main body of the book will be of interest to school teachers and administrators everywhere. One particular value of the reports is that they give not only the diagnosis of the child's personal traits but also the complete record of the school and home treatment as well as the results of this treatment. The cases were followed for a number of years, and the outcome demonstrates the correctness of the diagnoses and the efficiency of the treatment given. The three cases are discussed in an interpretative chapter written by H. C. Morrison. In this chapter Mr. Morrison emphasizes the responsibility of the school for its failures so far as these failures have been an underlying cause of the difficulties of these three children.

The study makes use of physical and psychological measurements and, to a great extent, of psychiatric methods. Since psychiatry has up to the present time played a relatively minor part in the treatment of problem cases in school, it is of particular interest to note how a combination of psychiatric and social

[1] *Three Problem Children: Narratives from the Case Records of a Child Guidance Clinic.* New York: Joint Committee on Methods of Preventing Delinquency (50 East 42d Street). Pp. 146.

methods can be applied. The study will help to demonstrate to the schools the value of modern psychiatric science and also the value of a social worker whose duty it is to follow a problem case not only in the school but also in the home and in the social background of the home.

G. T. BUSWELL

The measurement of intelligence by means of non-verbal tests.—A recent number[1] of the Harvard monographs in education describes a series of form board and performance tests of intelligence which have been used for a number of years in the laboratory courses in educational psychology and in the work of the Psycho-Educational Clinic of Harvard University.

> They have been used chiefly to supplement the Binet tests in the making of intelligence examinations, and the intention has been ultimately to arrange them as a scale which might take the place of the more linguistic tests in the examination of foreign-speaking subjects and those suffering from defects of speech and hearing, and to supplement other tests used in the examination of normal and defective children [pp. 3–4].

The material appears in three sections. Section I, which was written by W. F. Dearborn, describes the work on the tests as still far from complete at the present time and makes introductory comments on the methods and results thus far achieved. The object of the standardization is to reduce to quantitative terms the examiner's "qualitative" rating of the subject's mental operations in taking the tests. "This has been attempted in the present study by counting the number of correct and incorrect moves and making note of the time taken to complete the task" (p. 5). It appears that really essential differences cannot be established by means of these tests after seven or eight years of age. They do not "differentiate between higher grades or stages in the development of mechanical intelligence, but they can, perhaps, indicate the lack of such development" (p. 7). A brief discussion is given of the significance of the problem of measuring other forms of intelligence than the abstract or verbal forms, and valuable critical references are made to the contributions of other writers to this problem.

The tests are described in Section II. They are nine in number and include one color-form test, six form board tests, a picture puzzle, and a furniture construction test. Directions for giving, illustrative cuts, and methods of scoring accompany each test.

The work which has been done toward standardization of the tests is set forth in Section III. For each of the tests tentative norms are given by ages. In some instances the norms are based on very small numbers of cases. Although no statement is made in the monograph which explicitly encourages

[1] Walter F. Dearborn, Edwin A. Shaw, and Edward A. Lincoln, *A Series of Form Board and Performance Tests of Intelligence.* Harvard Monographs in Education, Whole No. 4. Cambridge, Massachusetts: Graduate School of Education, Harvard University, 1924. Pp. 64. $0.75.

the use of the tests by others, it is possible to give them with the aid of the directions and norms which appear in Sections II and III.

In a final word the authors admit the possibility that general intelligence and performance tests measure different traits. Even the various types of performance tests probably "differ as to the traits which they measure" (p. 64). It may be discovered that performance tests of general intelligence should be of types which "are more general in their nature and require abstract thinking in some degree for their successful completion" (p. 64). The authors conclude that there is no doubt of the value of the tests in clinical examinations. "A subject with a low I.Q. who does well in the form board tests can probably be developed into at least a semi-skilled worker, while the possibilities for the education of the feeble-minded or border-line case with poor performance test scores are very much more limited" (p. 64).

PAUL W. TERRY

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Two problems of rural education.—An interesting and very valuable contribution to the problem of rural education is to be found in a bulletin[1] published by the United States Bureau of Education in which the related topics of the consolidation of schools and the transportation of pupils are treated.

There is, first, a comprehensive historical survey, bringing out the interesting fact that, while consolidation has attained a major place in rural education at present and while there are various objective forms of consolidation, the original laws permitting consolidation (1838) are practically identical with the present-day laws. The situations demanding consolidation and the problems to be solved by it have been inherent in rural education from the very beginning and are only now being fully recognized.

The growth of the idea can be traced through four rather well defined periods. The first of these, from 1840 to 1880, shows the principle utilized almost entirely in urban communities and just beginning in the rural sections, despite the fact that there had been opposition to the district school for generations. The second period, from 1880 to 1894, was a period of very slow extension of consolidation and lack of interest in it. In the next period, from 1894 to 1910, there was great interest in rural schools accompanied by rather widespread enactment of consolidation and transportation laws. In a large number of cases the laws were put into operation. The last period, from 1910 to the present, has seen much intelligent and united effort in bringing about consolidation. Another important tendency has been evident, namely, the critical evaluation of consolidation.

It is shown that, while opposition to the small district school was vigorous, the consolidated-school idea had no less vigorous opposition in many sections.

[1] J. K. Abel, *Consolidation of Schools and Transportation of Pupils.* Bureau of Education Bulletin No. 41, 1923. Washington: Bureau of Education. Pp. iv+136

Even though many legal barriers were raised against the creation of small district schools, these actions did not aid consolidation so much as did the dissemination of information concerning the effectiveness of successful consolidated schools.

An excellent summary is given of other factors which have strengthened consolidation. The following are discussed at some length: state surveys, the establishment of the county unit, the growth of the high school, increased state aid of various sorts, national co-operation in education, improvement of teacher-training work, and the establishment of state departments of rural education. Certain economic factors, such as the depopulation of rural districts through the building of industrial centers, good-roads programs, and the automobile, are also important.

The evaluation of consolidation is confined largely to administrative and financial factors. The educational advantages are said to be too numerous to mention and to be available in many other writings. The caution is vigorously expressed that consolidation is a means and not an end. It is pointed out that in many places consolidation of districts and the building of a union school are looked upon as stepping-stones to better education. Many disappointments have resulted through lack of a thorough understanding of the uses of consolidation. Another caution of the greatest value is to the effect that consolidation will not lower the cost of education. It will, in most cases, raise it. The returns for the added expenditure, however, are proportionately very great.

The bulletin is in the nature of a summary and discussion of the present status of rural-school organization. As such, it is of considerable value to the student of education and to the rural-school administrator. It seems regrettable, however, that no very definite program or statement of guidance is included. It will be recalled that in the case of the Rustad, Minnesota, consolidated school survey it was pointed out that consolidation should not be made unless there are from eighty to one hundred high-school pupils available and about three million dollars worth of taxable property. If other statements of this nature could be worked out, they would be of real value to state departments of education.

W. H. BURTON

Two new spellers.—History reveals many changes and comparative measurement much progress in the teaching of spelling since the colonial period when spelling was related to reading as part to whole and children were taught to read "by spelling the same." The separation of the two subjects began over a century ago with the appearance of spelling books, and the fortunes of spelling as a distinct branch of study have been intimately associated with spelling texts ever since. In fact, it may be said that the public schools today rely on the authors of spellers for both their materials and their methods.

The preparation of an ordinary speller is not an extraordinary event. Such a book can be compiled almost while one waits. When, however, an author acquaints himself with the long list of scientific investigations dealing with spelling problems, as Tidyman has done, and employs the results of these investigations in his authorship, his work deserves careful examination.

Among the features of Tidyman's *Supervised Study Speller*[1] are (1) the selection of the words from the writing vocabulary of public-school children, (2) the grading of the words according to use and misspelling by pupils, (3) grouping according to similarity of phonetic elements, (4) directed class study in the lower grades, (5) individual study in the upper grades, and (6) standard tests for the measurement of results.

The outstanding methodological procedures provided for are supervised study and individual instruction. During the first two years the teacher is expected to direct study according to a well-worked-out technique based on scientific evidence. In the following years the pupils are expected to apply this technique individually as they study the words which they have been found unable to spell in the pre-test. The extent to which the average elementary-school teacher will be successful in training pupils for the independent employment of these study habits remains to be determined. Certainly it does not seem wise to rush into individual instruction without attempting to preserve those principles of effective teaching and learning that have accrued from many years of patient scientific research. The results of this method in the schools will be awaited with interest.

Another recent text[2] is the *Individual Speller* by C. W. Washburne, superintendent of the public schools of Winnetka, Illinois. The book is the product of several years of experimentation with the problem of individualizing instruction in spelling.

The vocabulary of the Washburne speller is selected from three sources: Anderson's adult-correspondence list, Tidyman's survey of the writing vocabularies of children, and Thorndike's 10,000-word list. The words are graded according to relative spelling difficulty and are arranged alphabetically within grades. Directions to the teacher are provided in a brief manual accompanying the text.

The form of the book and the methods of instruction reflect the chief interest of the author, namely, individual instruction. The well-known plan of pre-test, individual study of misspelled words, and re-test has been adopted. A method of studying spelling has been outlined in which the teacher is expected to train the pupils. The method consists essentially in writing words from memory. Finally, a thorough system of reviews is arranged, the text being adapted to making suitable record of the child's performance.

FREDERICK S. BREED

[1] Willard F. Tidyman, *Supervised Study Speller*. Yonkers-on-Hudson, New York: World Book Co., 1923. Pp. xii+132. $0.52.

[2] Carleton W. Washburne, *Individual Speller*. Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. iv+76. $0.32.

Elementary geography books.—Two textbooks in geography[1] which were first published in 1922 by George Philip & Son as introductory volumes in a series of geographies designed for use in the elementary schools of Great Britain are now available from an American publishing company. In prefacing these two readers for third-grade children, the authors avow the very worthy purpose of giving therein, through interesting story and description, some fundamental ideas of the relation of man to his environment that will serve in preparing for the more formal study of geography in the succeeding grades.

Book One is devoted to stories of visits which the moon man, his dog, and "I" make to Indian children and to the children of the Arctic, the steppe, the desert, the savanna, and the forest. Statements of interesting facts which might have been so used as to contribute to the fulfilment of the purpose expressed by the authors are mingled with accounts of the moon man and his companions in such a way that the children who read the book are justified equally in thinking the facts fancies or the fiction truth. The illustrations enhance the probability of such misconceptions, for in pictures that seem to the child to be photographs the visitor from the moon is shown both on earth and in his habitat in the sky. The treatment exemplifies a type of "writing down" to children which is not only unnecessary but also, in so far as it leads to erroneous ideas, definitely harmful. Children need both fairy-tales and true stories but not narratives which partake of the nature of both to such an extent that they are neither.

In Book Two, the stories deal wholly with real inhabitants of the earth. The theme of the book is geographic in the most modern sense of the term and is expressed simply and frankly at the very outset in the following sentence: "We are going to take ten different countries and try to show how the grown-ups live, why they live as they do, what they work at, and why they work in the way they do" (p. 9). From this point of view, the Eskimos, Laps, Australians, Zulus, Egyptians, people of New Guinea, Siamese, Greeks, Norwegians, and South Sea Islanders are discussed interestingly and in language which third-grade children can readily comprehend. With the exception of a few sentences here and there about ornaments and religious practices, all of the material is relevant to the development of the central theme. In a very few cases, the attempt to state geographic relationships in a simple way has led to such inaccuracies as that involved in the statement that "there is so much rain that rivers rise to flood the land and this makes rice the chief crop" (p. 89). The emphasis, apparent throughout the stories, on the adjustments the various peoples make to their respective natural environments is strengthened by the "why" questions in the exercises at the ends of the chapters and by the brief summary at the close of the book. The second book, then, unlike the first,

[1] James Fairgrieve and Ernest Young, Human Geography by Grades. Book One, *Children of Many Lands*, pp. 128; Book Two, *Homes Far Away*, pp. 144. New York: D. Appleton & Co., 1923.

should be welcomed warmly, not only because of the appeal it is certain to make to children but also because of its high geographic quality.

EDITH P. PARKER

Practical material for courses in rural education.—Those who are responsible for the training of rural teachers for the varied tasks which confront them will be interested in the material offered for such training by a collection of problems[1] pertaining to rural education.

The fields of rural-school administration and management are covered briefly in eighty-one problems, including such topics as "Attendance," "Program-making," "Classification and Promotion," "Discipline," "School Hygiene," "Buildings and Grounds," "Records and Reports," "County School Organization," "School Finance," and "Publicity."

Each problem is on a separate page of the book, which may be detached and bound in a loose-leaf notebook if desired. The problems vary in length from a single sentence to a statement of about five hundred words. Some of them are very brief descriptions of conditions which exist in specific situations, and some are summarized arguments about particular phases of the work. Each statement is accompanied by questions which require the student to find a solution to the problem by personal research or reference to certain suggested books. The pages are large enough so that the student's discussion and his answers to the questions may be written on the same sheet with the problem.

The author presents a selected bibliography on rural education and a list of Bureau of Education bulletins to which the student should have access. He has put into attractive and graphic form a body of material which should be most useful in helping prospective teachers of rural schools to think out many problems before meeting them in actual experience.

A. C. BOYCE

The project method in the teaching of science.—Teachers of physics, fresh from college courses replete with mathematics and laboratory experiments requiring measurements to the hundredth of a millimeter, forget sometimes that junior and senior high school pupils are interested in other things and that, while boys and girls may arrive at the collegiate stage some years hence, during the adolescent period they are on a different level. The author of a new book on the teaching of physics[2] tries to make the young teacher realize that it is boys and girls he is teaching and not merely the science of physics. Furthermore, he points out that here is a great body of vital material which touches every interest of the pupil—a body of material that can be made dead and

[1] L. A. Sharp, *Problems in Rural Education.* Boulder, Colorado: University Extension Division, University of Colorado, 1923. 81 problems. $0.75.

[2] Rogers D. Rusk, *How to Teach Physics.* Philadelphia: J. B. Lippincott Co., 1923. Pp. x+186.

uninteresting if put too soon into the formal mold of higher mathematics, rigid experiments, and dry-as-dust laws.

An opening chapter on the general relation of physics to modern education is followed by a chapter on the development of the subject of physics from Galileo to Einstein and a chapter on the development of physics teaching. Present tendencies of physics teaching are described as "toward a broader subject-matter more closely related to life and to the various intellectual fields; toward a vital teaching method in which the logical order of the subject is subordinated to the consideration of the pupil first, realizing that the great majority are not going to college; toward a closer connection with materials by demonstration and experiment; and toward less emphasis on the purely quantitative side of experimental work" (p. 33).

In the chapter entitled "Aims of Physics," Mr. Rusk states his belief that the science of physics contributes to social progress in three ways: "(1) by modifying the physical circumstances of life, (2) by revealing the conditions and processes to which life is subject, and (3) by helping to prepare individuals for life through the study of physics" (p. 34). The author shows in considerable detail how physics contributes to (1) adequate training of mind and body, (2) good character, and (3) an appreciation of life in its manifold relations, all of which he considers "corner-stones of social and individual worth" (p. 35).

In the chapters on "The Meaning of Physics" and "Physics and Mathematics" the author makes a plea for greater clearness in the use of physical concepts and terms, for a more vital relation between physics and mathematics, and for freedom from problems just for the sake of exercise.

A discussion of "Scientific Method" leads to the main object of the book, namely, teaching method. After outlining what is meant by a scientific method, the author shows that "the project method is a development method of a high type in which the essential elements of the true method of science are properly emphasized" (p. 72).

The book is a contribution to the literature on school projects, but project teaching is hardly the chief purpose of the author. He does not push the idea of projects to the exclusion of everything else. The following quotations show his common-sense attitude toward project teaching: "Enthusiasm for one particular method must not be permitted to obscure the fact that no one method applies equally to all subjects or to all portions of any one subject" (p. 73). "The project method as now developed is particularly useful in teaching younger pupils general science, but it would not get a physics pupil very far into the subject of radioactivity" (p. 74).

The author distinguishes two types of projects, the lesson project and the group project. In either case, the method starts with a problem which may originate in the text, recitation, laboratory, or a suggestion from the teacher. The lesson projects proceed to gather pertinent materials, while the group projects co-ordinate these into groups and bring out the fundamental principles involved.

The concluding chapters are entitled, "Some Common Mistakes" and "Grades and Tests in Physics." The latter chapter calls attention to some of the difficulties with standardized tests in physics and shows how some of them may be overcome. The author is not hopeful about the movement, but, in general, his objections do not differ from the criticisms of such tests in other fields where they have become very useful.

A book such as this should be read by all college graduates who plan to teach science in the junior or senior high school. They need it to help them to see their problems from the high-school point of view and to get a sympathetic understanding of the adolescent student. Young teachers will find a great many useful facts in this book which their college physics did not teach them.

A. C. BOYCE

The teaching of health in the elementary schools.—The teaching of health has made marked progress from the period when it consisted of a simple course in physiology to the present time when it consists of a series of graded lessons which build up a more complete understanding of the functions and care of the body.

A recent four-book series makes a valuable addition to the literature of this field.[1] These books are designed for use throughout the elementary-school period. The first book is for children under eight years of age. Its purpose is to give certain simple facts about health and growth and to stimulate an interest on the part of young children in proper health development. The seventeen lessons in the book are accompanied by excellent pictures which serve as models for health activities of children.

The second book in the series is for pupils from eight to ten years of age. This book is built on the same plan as the first. It is, however, more difficult. It includes much more information and adds to the list of topics discussed in the first book. The aim, however, is distinctly that of developing proper health habits in children. The descriptive lessons are followed by questions and exercises for class discussion.

The third book of the series is designed for pupils from ten to eleven years of age. In this book the sections begin with short health-impression lessons. These are followed by supplementary readings which are, in general, human-interest stories pertaining to the health lessons. The book has thirty-two chapters, each of which deals with a definite topic of health education. The range of topics is broad, including such subjects as "The Right Way to Stand," "How Our Teeth Grow," "Walking," "Safety First," "First Aid," and "Germ Diseases and How to Prevent Them."

The last book of the series is planned for children over eleven years of age. The first section is devoted to physiology. In eight chapters, the authors give

[1] Belva Cuzzort and John W. Trask, *Health Lessons*, pp. vi+38. *A Primer of Personal Hygiene*, pp. viii+62. *Health and Health Practices*, pp. x+178. *Essentials of Physiology, Hygiene, and Sanitation*, pp. viii+232. Boston: D. C. Heath & Co., 1923.

what they consider to be the essential information regarding physiology for children of this age. The remaining part of the book is divided into three sections dealing with personal hygiene, the hygiene of the home, and community hygiene. Personal hygiene and community hygiene are treated in great detail.

As a series, the books provide an excellent basis for health teaching. They are mechanically well prepared; the illustrations are excellent; and in the general organization there is much to commend.

Principals of elementary schools will find these books a welcome addition to the available material in this field.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

AGNEW, WALTER, D. *The Administration of Professional Schools for Teachers.* Baltimore: Warwick & York, Inc., 1924. Pp. 262. $2.20.

BERRY, RALPH EDWARD. *The Administration of the Part-Time School in the Small Community,* Part One. Part-Time Education Series, No. 13. Berkeley, California: University of California, 1924. Pp. 46.

CLARK, HAROLD F. *The Cost of Government and the Support of Education.* Teachers College Contributions to Education, No. 145. New York: Teachers College, Columbia University, 1924. Pp. x+78.

COOPER, HOMER E. *Cost of Training Teachers.* Baltimore: Warwick & York, Inc., 1924. Pp. 112. $1.60.

HUNT, CHARLES W. *The Cost and Support of Secondary Schools in the State of New York.* Report of the Educational Finance Inquiry Commission, Vol. III. New York: Macmillan Co., 1924. Pp. x+108.

IRWIN, ELISABETH A., and MARKS, LOUIS A. *Fitting the School to the Child.* New York: Macmillan Co., 1924. Pp. xxvi+340.

MACPHAIL, ANDREW HAMILTON. *The Intelligence of College Students.* Baltimore: Warwick & York, Inc., 1924. Pp. viii+176. $1.80.

MCGAUGHY, J. R. *The Fiscal Administration of City School Systems.* Report of the Educational Finance Inquiry Commission, Vol. V. New York: Macmillan Co., 1924. Pp. xii+96.

PITTMAN, MARVIN S. *Problems of the Rural Teacher.* Bloomington, Illinois: Public School Publishing Co., 1924. 72 problems. $0.75.

RANDOLPH, EDGAR DUNNINGTON. *The Professional Treatment of Subject-Matter.* Baltimore: Warwick & York, Inc., 1924. Pp. 202. $2.20.

STEDMAN, LULU M. *Education of Gifted Children.* Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. viii+192. $1.80.

WILSON, HARRY B., KYTE, GEORGE C., and LULL, HERBERT G. *Modern Methods in Teaching.* Newark, New Jersey: Silver, Burdett & Co., 1924. Pp. vi+286. $1.64.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

ANDRESS, J. MACE. *The Boys and Girls of Wake-Up Town.* The Story Series in Health, Book Two. Boston: Ginn & Co., 1924. Pp. vi+218. $0.76.

Fine and Industrial Arts in the Saint Cloud Public Schools: Grades One to Six. Prepared by Jean Van Vliet Spencer. Saint Cloud, Minnesota: Board of Education, 1924. Pp. 288. $1.75.

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